36 PAGE FAMILY COMPUTING SUPPLEMENT

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ACORN USER

The magazine for all users of 32-bit RISC OS computers

The best Christmas games



The DECEMBER 1994

ACORN USER DISC

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Part 2: charts and graphs

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VIRUS CHECKED

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DECEMBER 1994

ISSUE 149

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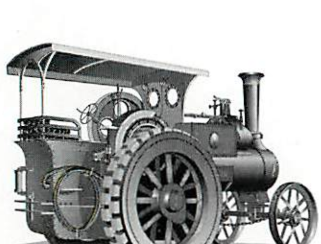
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A new professional edition of the best selling Impression DTP program.

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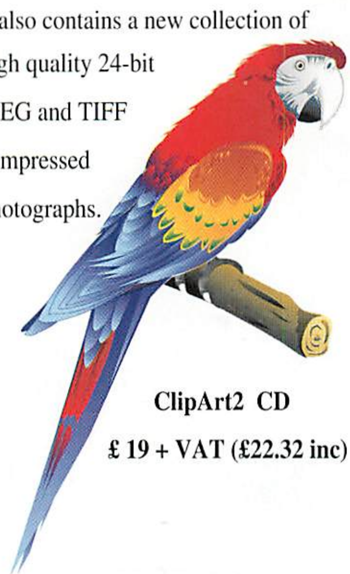


ClipArt 2 CD

The results of the second ArtWorks clip-art competition. This CD includes over 500 new clip-art examples, plus all those included in the ArtWorks package.



It also contains a new collection of high quality 24-bit JPEG and TIFF compressed photographs.



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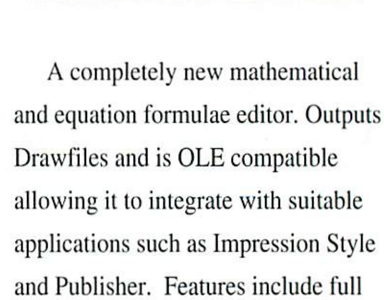
FOR TURBODRIVERS & LASERDIRECT

This package includes a copy of the TurboDriver software and network spooler software allowing any machine connected to an AUN compatible network to print to a common printer. The software also supports LaserDirect printers and includes an unlimited network site licence.

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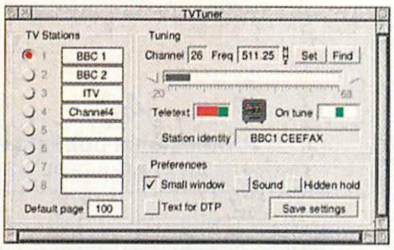


Formulix
£69 + VAT (£81.07 inc)
Upgrade for existing Equasor owners
£49 + VAT (£57.58)

...What's new from Computer Concepts this Autumn for Acorn RISC Computers

TV Tuner

An expansion card consisting of a TV Tuner module that can output composite video signal (TV can be watched either on a separate monitor, or on your computer screen via a suitable video digitiser). Optional Teletext software allows Teletext pages to be viewed on screen, and saved as text or sprites etc.



TV Tuner
£89 + £6 p&p + VAT
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TV Tuner + Teletext Software
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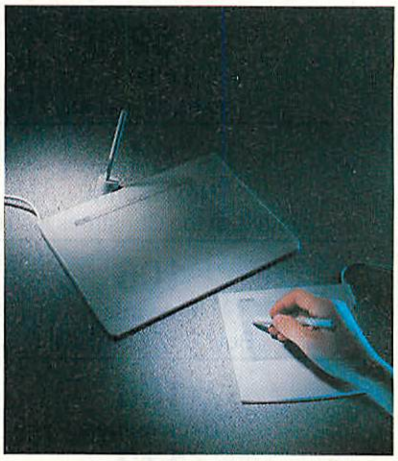
Wacom ArtPad
£169.00 + VAT (£198.57 inc)
Wacom A5
£399.00 + VAT (£468.82 inc)
Wacom A4
£549 + VAT (£645.07 inc)

Movie Magic

Amazing new expansion card for Risc PCs, allows full motion, full screen video with CD quality stereo sound, to be obtained from standard MPEG movie files. With a compatible CD player it can play VideoCDs to provide better than VHS quality video. Scart RGB video output to a suitable (ie PAL frequencies) monitor. An optional upgrade (available later) allows video in a window on a Risc PC as an alternative to video out.



Movie Magic
£249 + £6 p&p + VAT
(£299.62 inc)
Movie Magic Video in a window - available later £TBA



Computer Concepts Ltd

RISC OS 3 Turbo Drivers Version 4

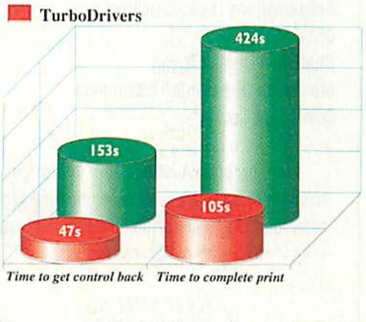
The latest version of the TurboDrivers supports Acorn !Access network software, is compatible with the Risc PC and the latest versions of !Printers.



Now offers better colour control and very significant performance gains over any alternative printer drivers - typically it's between two and ten times faster ! Versions available for all the popular inkjet printers.

Risc PC TurboDriver timings

Acorn !Printers
TurboDrivers



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£49 + VAT (£57.58 inc)
TurboDriver Epson - includes support for Epson Stylus Colour - £49 + VAT (£57.58 inc)

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Editor's letter

It's Christmas time and, true to form, those Christmas games are beginning to appear in numbers. Everyone likes to spend at least *some* leisure time with their Acorn, so jump on in and enjoy our ten pages of games coverage, including the exclusive diary of the conversion of *Flashback* by the author, Dave Lawrence.

On a more serious note, the supplement attached to this issue is a testament to the power of Acorns in publishing – yes, all the editorial pages were produced entirely on a Risc PC using *Impression Publisher*. Hopefully we'll be able to incorporate Acorn machines into the production of the magazine on a more regular basis.

And I'm pleased to say that *HomeWorks* is back. Apologies for the delay, and I hope you like it...

Mark Moxon, Editor

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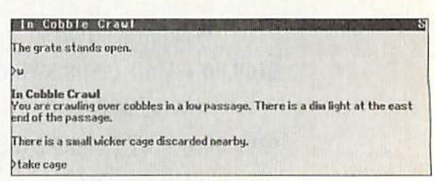


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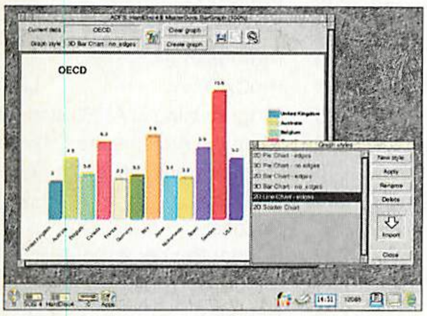


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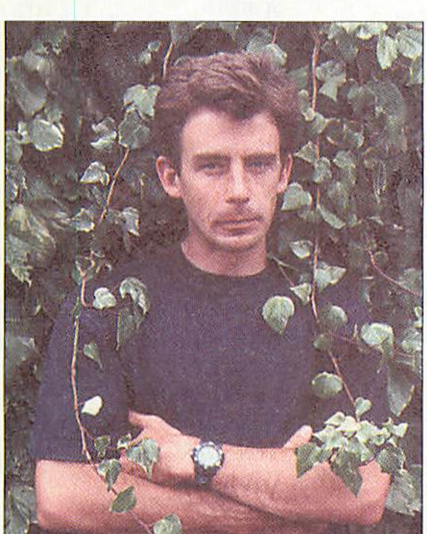
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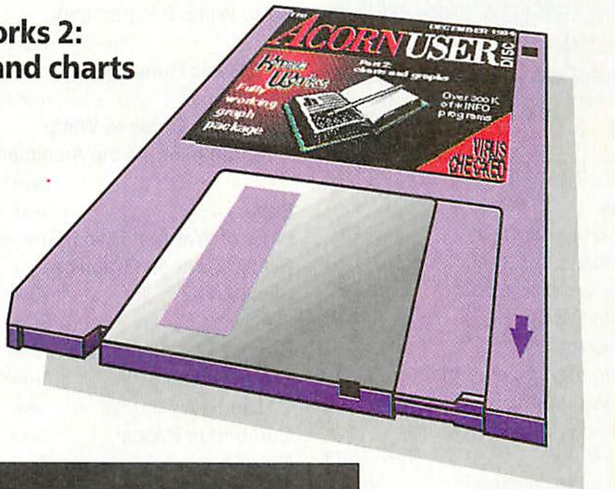
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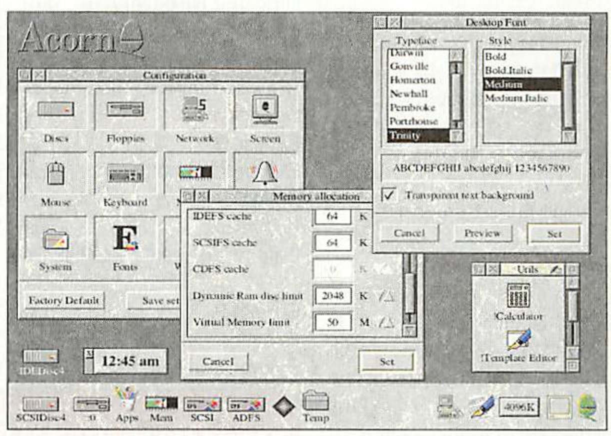
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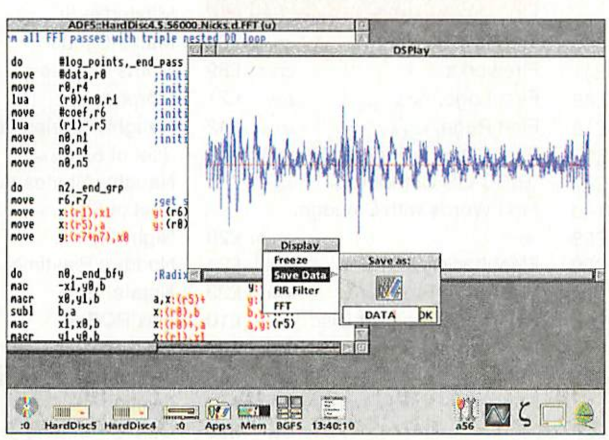




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ICS 0151-625 1006

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why...

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Our monthly advertisements show a selection from well over 1000 Acorn products in our full list. We probably carry a wider range of stock than any other magazine advertiser. If something is not in our main list we will try to obtain it for you.

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About half our orders are despatched the same day, and we are always looking for ways to improve our system. We list many of the less common products and these may sometimes take a little longer to reach you.

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People who telephone for the first time often tell us what a pleasant change it makes to speak to our helpful staff. If you are new to computing we will be happy to suggest products to suit your interests and your pocket.

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We will always give you the very best advice we can. If we don't know the answer we won't pretend we do or try to blind you with science. We won't try to sell you a £100 product if we believe a £20 item is better.

And we won't refuse to talk to you if you have a problem later.

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Many of our *normal* prices are already lower than the special education prices offered by some publishers. But we can offer further discounts for quantity purchases. Please don't make the mistake of assuming it will be cheaper for you to buy direct from a publisher or through your local authority. Always check with us!

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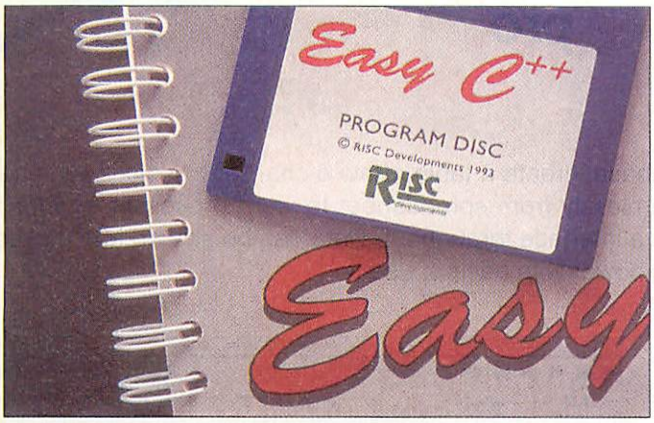
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Fax 0151-625 1007

For free price lists write to ICS (Ian Copestake Limited)
Dept U8C, 1 Kington road, WIRRAL, Merseyside, England, L48 5ET

Beebug launches C++ compiler



The first C++ package for the Acorn platform: and it's about time.

BEEBUG'S new *Easy C++* compiler has been officially launched and beats Acorn's own C++ compiler to market, filling a gap which software developers have been clamoring for for some time. Indeed, some developers have blamed the lack of a C++ compiler as the reason for their moving development to Windows.

Easy C++ is not a C to C++ translator, according to Beebug, but compiles directly to ARM code. Beebug also describes *Easy C++* as a full implementation of C++, conforming to Stroustrup text and supporting both Templates and Exceptions. The same WIMP front-end as the original version of C++ is retained.

ANSI C and IOstream libraries are included and there is a Make utility as well. The first version will not have a C++-compatible source-level debugger, but purchasers will be eligible for a free upgrade once that utility has been completed.

Easy C++ can also be used as a plain C compiler in its own right. *Easy C++* is priced £99 + VAT and users of the original *Easy C* package can upgrade for £49 + VAT.

Beebug
Tel: (01727) 840305
Fax: (01727) 860263

Minerva map importer

Previewed earlier this year, Minerva Software's Ordnance Survey digital map data application for schools has been officially named *Map Importer* and is available now, priced £29.95 + VAT, £45 + VAT for a primary school site licence or £120 + VAT for a secondary school licence. *Map Importer* can take Ordnance Survey digital map data and display detailed maps on the RISC OS desktop.

Maps can be panned and zoomed, printed and exported as *Draw* files. You can also deselect objects from the map and add new objects too. *Map Importer* is only available to schools and a copyright licence is required for schools who are not covered by the Local Authority Service Level Agreement. Ordnance Survey digital map data can be obtained under licence from the Ordnance Survey's Digital Sales Department on (01703) 792773.

Minerva Software will be showing *Map Importer* at Acorn World, as well as officially launching *PrimeMover,* the animation package for schools.

Minerva Software
Tel: (01392) 437756
Fax: (01392) 421762

Sibelius Software expands to World service

SIBELIUS SOFTWARE has celebrated the sale of its 200th *Sibelius 7* music publishing system (which comprises an Acorn computer, a printer plus the *Sibelius 7* software) by moving to bigger offices and getting its package featured on the BBC World Service. This reflects the success of the Sibelius package, which has been showered with praise since its launch.

Three more staff have been taken on, including a full-time export sales manager who will handle the growing interest from Europe and Australasia. *Sibelius 7* was due to be featured on the World Service Meridian programme on 18 October. Paul Patterson, Professor of Composition at the Royal Academy of Music demonstrated the software on the programme.

Sibelius Software
Address: 4 Bailey Mews, Auckland Road, Cambridge CB5 8DR
Tel: (01223) 302765
Fax: (01223) 351947

Liquid Silicon bar coders

LIQUID SILICON has launched a range of bar code readers which have been integrated into the RISC OS desktop. Software is provided for decoded data to be passed to applications like databases and accounts packages. Liquid Silicon also produces bar code production software covering the formats: EAN-8, EAN-13, UPC, Code 11, Code 39, Code 93, Code 128, Codabar, 2/5, etc.

Liquid Silicon
Tel/Fax: (01592) 260512

Acorn Enthusiasts

Acorn is to introduce the Acorn Enthusiasts' Scheme at Acorn World. People joining the schemes will be eligible to enter competitions to win various Risc PC goodies like ARM700 upgrades and 486 PC co-processor cards, as well as a multi-ARM processor card. Full details will be revealed during the event.

Matt Black clip art

Acorn software house Matt Black has announced it is to cease developing games because its clip art products have taken over the business. Matt Black's Matthew Fifield explained: 'In the past we were technology led, developing products first and finding customers for them afterwards.' He now says the needs of the customer are identified first. Matt Black's *ClickArt Education Image Pack* has sold particularly well, according to the company. Fifield adds that the market for clip art in the Acorn world is expanding and Matt Black is well positioned to supply the major share of the market's needs.

Matt Black
Tel: (01733) 315439

Spring show dates

The dates have been set for the 1995 *Acorn User* Spring Show, again in Harrogate. The show will be a two-day event, and will be over the weekend of 6 and 7 May. We will, of course, be bringing you details of the show, which is being sponsored by *Acorn User* magazine, over the issues leading up to the show.

Spex update

ExpLAN is recalling all copies of its Spex program that were purchased prior to 11 May 1994 for a free upgrade, due to known faults in the data file structures used which, apparently, could affect other software in the future. Users should return their Program disc and the Items disc containing the Home environment to Spex Recall, ExpLAN UK Ltd, St Catherine's House, Plymouth Road, Tavistock, Devon PL19 8AY. Please include your address.

Full Integration

fireworkz pro

Database, spreadsheet and word processor all in one

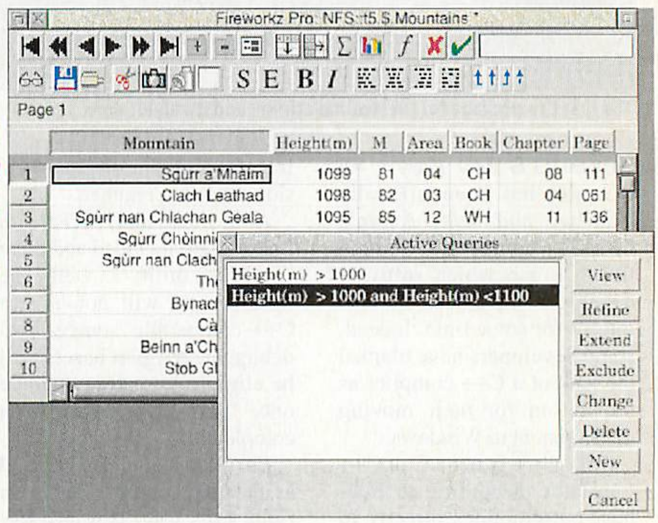
Whether you want to write a report, mail merge a database, create a table, draw a chart or calculate personal finances, **Fireworkz Pro** has all you need. Move seamlessly from spreadsheet to word processor and from word processor to database and keep the same intuitive interface throughout. Data can be shared and moved between all three aspects of Fireworkz Pro, combining power with ease of use.

Recordz is the new fully featured database from Colton software. Flexible options include card index or spreadsheet layout, refinable search queries, easy label printing and mail merging. The only limit to the size of your database is your available disc space. The search language is very simple, with choices such as 'contains' or 'does not contain' - there are no complex commands to remember.

wordz

recordz

resultz



Recordz shares the excellent Z family user interface, making it one of the friendliest databases ever created. The status line helps you with choices and the emphasis is on ease of use throughout the program. Combined with Wordz (word processor) and Resultz (spreadsheet) Recordz forms Fireworkz Pro. Buy Recordz on its own for just £99 or as part of Fireworkz Pro for £149. Recordz site licences start at £198 (10 user), Fireworkz Pro site licences start at £298 (10 user).

- Fireworkz users can upgrade to Fireworkz Pro for only £49
- PipeDream 4 users can upgrade to Fireworkz Pro for £79
- **Fireworkz for Windows** is now available - existing Fireworkz (RISC OS) users can purchase this for £50
- **ClassCardz** - A4 laminated learning cards are now available for Wordz and Resultz at £20 per photocopiable set

If you would like to order or wish for more information and a free demo disc, please contact us at the address below. Or clip the coupon and return it to us.

We accept Access and Visa. Cheques should be made payable to Colton Software. All prices exclude VAT and delivery (P&P £5).

COLTON software

Tel 01223 311881

Name		Please rush me:	Tick✓
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		Fireworkz for Windows info & demo disc	
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Colton Software, 2 Signet Court, Swann's Road, Cambridge, CB5 8LA. Tel +44 (0) 1223 311881. Fax +44 (0) 1223 312010. Email: info@colton.co.uk

Digital Services Nucleus and CD-ROM server

A PAIR of interesting new networking products have been announced by Digital Services. The first is *CD Server*, a performance-boosting software package for sharing one or a number of CD-ROM drives over a network. The second is *Nucleus*, an ambitious new fileserver for Acorn networks.

CD Server incorporates two levels of cache to optimise performance. The first level is hard disc-based, reserving a segment of storage on the server's local hard drive for the first level CD cache. The second level cache resides in the server's memory. Digital Services is underlying the goal of high performance for *CD Server* and says that depending on the configuration of the network, up to six *Replay* sessions can be active over an Ethernet network at the same time. *CD Server* works with both native Acorn CD-ROMs and PC-compatible CDs used under the PC emulator or add-on PC hardware. *CD Server* is priced at £199 + VAT.

Nucleus is a radically designed replacement fileserver operating system for Acorn fileserver installations. *Nucleus* has been designed with networks as large as 100 users or more in mind. Digital Services says *Nucleus* resolves many problems users have encountered with Acorn Level 4 software. *Nucleus* is designed to be faster, backwards compatible with older Acorn networks, including *Econet*, and it has a modular design for easy upgrading to cope with both hardware and software developments.

Nucleus replaces ADFS with a new disc filing system called PFS. It allows longer file names and files larger than 16Mb (now up to 4Gb), as well as larger disc directories and extra file attributes. Extra fault tolerance has been built in as well.

A new print spooling system called *Freeway 2* has been introduced which increases data packet sizes to transfer print data quicker across the network, and boasts true multi-threading event-driven background operation. This means it will work even when non-RISC OS software is running. Another new feature is the addition of Sub-Management levels, providing a degree of different management privileges for a range of people with different authorisation levels. On the hardware side, hard drives of up to 16Gb in size can be addressed. The list goes on. Pricing starts at £199 for 1-10 users, £399 for 11-25 users, £549 for 26-50 users and £749 for up to a hundred users.

Digital Services
Tel: (01705) 210 600
Fax: (01705) 210 709

New Academy TV CD-ROMs

A NEW multimedia CD-ROM concentrating on environmental issues has been developed by Yorkshire Television's Academy TV subsidiary, in conjunction with Interactive Learning Productions (ILP). *Land & Air*, follows the successful *Environment: Water* CD-ROM.

The new CD-ROM has had input from industry experts, environmentalists and campaign groups. Six documentary-style videos are contained on the CD-ROM, which examine the title issues of *Dwindling Resources, Food or Famine, Air Quality, Natural Disasters, Climate Change* and *Conservation*. As the CD-ROM is interactive, the programme can be stopped at any point and the user can jump straight to another section on the CD-ROM.



Land & Air follows on from the successful *Environment: Water* CD

ILP's Sarah Radford explained: 'This form of presentation promotes a cross-curricula approach not normally possible through traditional methods like reference books' – this is, of course, one of the chief points of multimedia. The CD-ROM is supplied with a multiple choice quiz called *Green With Envi* (the title of which is, presumably, a play on words and not spelling) and a Curriculum resource pack. ILP's *Scrapbook* application is supplied too, which enables the user to manipulate, view and save data into his or her own files. *Land & Air* is priced £130 + VAT.

Academy Television
Tel: (01532) 461528

Widget on call

Psion Series 3 specialist, Widget Software, has produced *Kallcost*, a ready reckoner application for comparing the costs of BT and Mercury phone calls. *Kallcost* will also run on the Acorn Pocket Book range. *Kallcost* can be used to log calls and compare tariffs, enabling the user to calculate if Mercury can offer savings over BT. Tariffs can be updated by the user should they change and discounts are fully taken into account. *Kallcost* is priced £49.95 inc. VAT.

Widget Software
Tel: (01438) 815444
Fax: (01438) 815222

New scanner software

David Pilling has released three new TWAIN image scanner drivers for the Nikon Coolscan 35mm slide/negative SCSI bus scanner, Mustek Paragon A4 three-pass colour flat bed SCSI scanner and the Microtek ScanMaker II A4 colour three-pass scanner. The drivers are priced £20 each, or £35 including *ImageMaster* image processing software. Prices include VAT and carriage.

David Pilling
Address: PO Box 22, Thornton Cleveleys, Blackpool FY5 1LR
E-mail: david@pilling.demon.co.uk

Latest Landmarks

Two new *Landmarks* datafiles for 9-12 year olds have been published by Longman Logotron and BBC Educational Publishing: *Britain since 1930* and *British Monarchs*. The datafiles can be used with either *PinPoint* or *Junior PinPoint*.

Longman Logotron
Tel: (01223) 425558
Fax: (01223) 425349

Question Psion

The 100 Most Frequently Asked Questions for You and Your Psion Series 3A & 3 is the title of a new book from Kuma on the popular Psion personal organisers, the basis of the Pocket Book range. As far as we know, the book doesn't address the Pocket Book directly, but some of the topics covered will be relevant to Pocket Books.

Kuma
Tel: (01734) 844335
Fax: (01734) 844339

THE CRYSTAL MAZE

CHANNEL FOUR TELEVISION

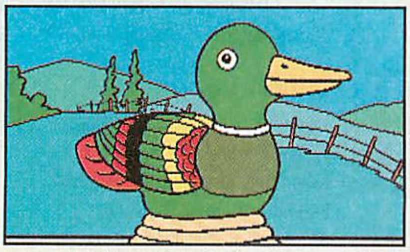


Now you can play TV's No.1 Adventure Game

The Crystal Maze is a Chatsworth Television production for Channel 4 based on ideas by Jacques Antoine ©1990

£39.95 inc VAT

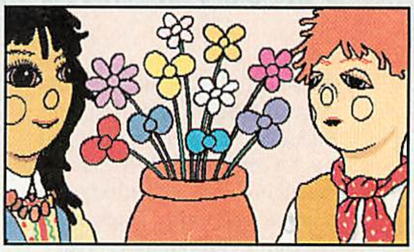
ROSIE AND JIM TALKING ACTIVITIES



Duck loses his Quack

The two cheeky rag dolls from the record breaking television series for pre-school children are now available on Acorn computers using Sherston's extremely successful talking book technology





Jim gets the Sneezes

£11.75 each inc. VAT

Rosie and Jim is a Ragdoll production for Central Television

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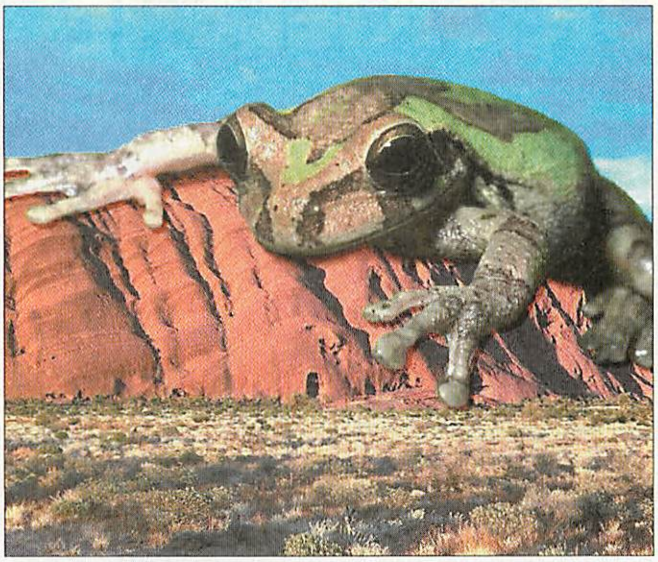
All prices include VAT and carriage within the UK.

Highlight of the show?

PROARTISAN 24, the new 24-bit painting and image processing package from Clares, will be officially launched at Acorn World. The other main highlight of the show will be a preview of *Composition*, which has apparently gained the nickname '*Compo*'.

Another attraction will be the *Schema 2* spreadsheet, and the *Musketeer* pack is another new product; a collaboration to bundle *Impression Style* from Computer Concepts, *DataPower* from Iota and *Schema 2*. Apparently, we can expect an unusual launch event for *Musketeer* at the show

Clares
Tel: (01606) 48511
Fax: (01606) 48512



ProArtisan24, eagerly awaited by *ProArtisan* fans

Longman Logotron enhancements

LONGMAN LOGOTRON will be showing off some of its software titles at Acorn World, enhanced to take advantage of Risc PC features. *Eureka* has now moved on to version 3, while a 24-bit colour version of *Revelation Image Pro* will be showing off the capabilities of the Risc PC at the show. Homerton College, Cambridge, had a hand in the development of this latest version of *Revelation*, in conjunction with the NCET (National Council for Education technology).

Coming back to the origins of the Longman Logotron name, a new Risc OS version of LOGO, called *WinLogo*, will also be demonstrated. Other relatively new Longman Logotron wares, like *S-Base 2* (now priced £49 for the personal version and £99 for the developer version) will also be shown on stand 77.

Longman Logotron,
Tel: (01223) 425558
Fax: (01223) 425349

Silicon Vision updates

SILICON VISION has released new versions of *WimpGEN* and *RiscBASIC*. The former, an easy-to-use graphical RISC OS user interface designer, has a number of improvements. It now separates *WimpGEN* generated code from User application code to speed up the *WimpGEN* code development cycle. Menus and icons have been improved, there is 3D *NewLook* support, and multi-window dialogue boxes are easier to construct. Price is still £79.95 + £3 P&P + VAT.

RiscBASIC is now up to version 3.15 and has enhancements to cater for Risc PC features plus FPA support. The price is also £79.95 + VAT.

Silicon Vision
Tel: 0181-422 3558
Fax: 0181-248 3589

Online Media starts trial interactive TV service

ACORN'S spin-off venture into the interactive multimedia world, Online Media, has started its first field trial in Cambridge. It's thought to be the world's first digital interactive television trial to use ATM technology (asynchronous transfer mode) end to end.

Online Media set-top boxes, based loosely on Acorn Risc PC technology, have been installed in the homes of ten families. The boxes are connected to a multimedia server array called a Video DiskBrick at ATM Limited (ATML) via ATM networking which is passed through the Cambridge Cable fibre network. A Risc PC acts as a file server to deliver games and educational software to the trial customers. The service will also initially provide movies, local news and weather from Anglia TV. A tele-shopping service featuring Woolworths merchandise is on the cards too. SJ Research, which revealed its four year experience in ATM technology last month, is also involved in the trial.

While the initial test service is only available to a small number of users, the network will gradually be increased in size, rising to four figures by the end of 1995.

These trials are a vital part of demonstrating the advantages of the Online solution compared to the rival Apple system, which has been on trial for a few months now.

Online Media
Tel: (01223) 518518
Fax: (01223) 518520

ChangeFSI 1.00

Acorn's *ChangeFSI* graphical image conversion utility has finally reached release version 1.00, even though it has been a highly useful RISC OS utility ever since RISC OS 2 was launched back in 1989. *ChangeFSI* 1.00 adds the ability to convert Pocket Book 2/Series 3a organiser screen files into sprites. *ChangeFSI* has to be modified every time a new graphics format is identified and while it's intended to supply version 1.00 with Pocket Book 2s, don't be surprised if the version number has incremented another hundredth or so, says Acorn's Neil Gardner.

Wizzo on the Risc PC

One of the old limitations of RISC OS which remains even in the new Risc PC version is the inability to address hard discs larger than 512 megabytes. ICS (Ian Copestake Software) has contacted *Acorn User* to point out that its *Wizzo IDE Filing System* software on ROM can get around this problem, and partition drives as well as add password protection. A carrier board for the Risc PC version of *Wizzo* should be available now.

ICS
Tel: 0151-625 1006
Fax: 0151-625 1007

Welsh open day

The ARM Club is to hold an open day in Wales on 3 December at the Llanishen Leisure Centre, Cardiff, from 10am to 5pm. Members will be on hand to help with topics like scanning, printing, digitising and more. The event is being supported by Uniqueway, Eesox and the PD Library, while Computer Concepts' Gordon Taylor and Acorn Computers' Tim Beeby will be on hand.

D.Rowlands
Tel: (01222) 868635

New 10/10 releases

The multi-platform software house 10/10 Educational Systems is releasing a number of 'edutainment' titles for the Acorn platform over the next two months. The titles include *Driving Test, Essential Science, Essential Maths, Geometry* and *Structured Spelling*.

10/10 Educational Systems
Tel: (01742) 780370
Fax: (01742) 781091

EASY C++ - THE EASY WAY TO LEARN OR DEVELOP YOUR SKILLS IN C++

Easy C++ is the first implementation of the in-vogue object oriented programming language C++ written specifically for Acorn RISC OS systems.

This implementation conforms to the latest Stroustrup text and supports both Templates and Exceptions.

- Uses the much praised Easy C WIMP front-end which allows programs to be compiled, linked and run at the click of a button.
- Supplied with *ANSI C* and *IOstream* libraries. Library facility allows further libraries to be created.
- *Make* facility with automatic generation of Make files.
- Integrated ARM assembler.
- Supports the *Throwback* facility allowing errors to be passed back to editors such as DeskEdit, Zap and StrongEd.
- Superb source-level debugger for C programs (C++ version available in next release). Purchase Easy C++ now and receive an automatic upgrade to the next release.
- FreeWare C library *DeskLib* provides functions for writing WIMP programs.



Easy C++ is not a C++ to C translator but compiles C++ source directly to ARM code making it quick and easy to use. Unlike other systems it runs in only 2MB RAM.

The original highly acclaimed Easy C package is still available which is ideal for programmers wishing to learn or develop their skills in C. An upgrade from Easy C to Easy C++ is also available.

For more information phone 0727 840303 or to order direct call 0727 840305.

The Easy C Range		
0101	Easy C++	£99
0100	Easy C	£59
0109	Upgrade Easy C to C++	£49

BEEBUG

Beebug Ltd. 117 Hatfield Road, St. Albans, Herts. AL1 4JS
Tel. 01727 840303 Fax. 01727 860263
Prices exclude £2.70 carriage and VAT.
To upgrade, please return original Easy C Program disc marking your envelope 'C++ Upgrade'.
Please note that Easy C++ does not teach C++ programming.

Another Cumana CD-ROM bundle



Cumana's latest seven-disc CD-ROM bundle

SEVEN CD-ROMs are included in the latest CD-ROM bundle available from Cumana, covering subjects from life in Victorian Britain to the peculiar life of insects. The bundle is the NCET Primary CD-ROM pack, which comes with a set of mains-powered stereo speakers, and was originally selected by the NCET to form part of the Acorn offering for the government CD-ROM in Schools Initiative.

Picturebase – Victorian Britain is the first of a pair of historical CD-ROMs, The second is *Frontier 2000*, a simulation illustrating the history of the Border region from 43AD to 1991. *Creepy Crawlies* looks at spiders, beetles and other bugs. *Usborne Exploring Nature* is an activity-based CD-ROM to help children explore the plant and animal kingdoms.

Also included in the bundle are the *Hutchinson Multimedia Encyclopedia, PhotoBase Landscapes* and *Sherston Naughty Stories*. The bundle is valued by Cumana at £690 + VAT but is on offer for £575 + VAT. You get a further £75 off by purchasing the bundle at the same times as buying a Cumana CD-ROM drive

Cumana
Tel: (01483) 503121
Fax: (01483) 451371

Even more turbo-driven printers from CC

COMPUTER CONCEPTS has produced a *TurboDriver* for the brand new Canon BJC-4000 bubble-jet colour printer. This new Canon is a cheaper alternative to the much-acclaimed BJC-600.

The printer can be fitted with either a single high-capacity black ink cartridge or with a twin-cartridge arrangement consisting of a single black cartridge and a single combined cyan/magenta/yellow cartridge. This compares with the BJC-600's arrangement of four separate and lower capacity cartridges.

New fast drying, water-resistant inks are used by the BJC4000. The black ink's density has been improved too.

As with the BJC-600, print resolution is a maximum of 360x360 dots per inch for colour, though the BJC-4000 adds a 720x360 resolution monochrome mode.

A double speed draft print mode is available. The BJC-4000 is more suitable for users who require occasional colour printing on top of the usual black and white usage. CC is selling the BJC-4000 with *TurboDrivers* for £369 + VAT.

Acorn User can now reveal prices for some forthcoming CC products previously mentioned in the news.

Formulix is priced £69 + VAT; Version 4 of *TurboDrivers* (Risc PC compatible), including a version for the new Epson Stylus colour printer – £49 + VAT; *ScanLight Professional Colour* inc. *PhotoDesk* – £749 + VAT; TV Tuner card, with teletext software – £159 + VAT, without teletext – £89 +VAT; Clip Art CD 2 – £19 + VAT; *TurboDriver* and *LaserDirect* spoolers – £149 + VAT; Movie Magic MPEG card – £249 + VAT.

Computer Concepts,
Tel: (01442) 63933
Fax: (01442) 231632

New utilities from the ARM club

SEVERAL new software releases have been unveiled by the ARM Club. *Smart CD+* is a commercial version of the Ian Giblin audio CD player application. Among a number of features, *Smart CD+* can be programmed to record a selection of tracks to a cassette tape and produce a cassette inlay index card for printing at the same time. *Smart CD+* is priced £10.

Also for a tenner is *TypeTutor*, which can support either the Risc PC's IBM-compatible keyboard layout or the original Acorn Archimedes layout.

Finally, there is a collection of utilities for the desktop, graphics and programming, priced £5 each.

The ARM Club
Address: Freepost ND6573, London N12 0BR

Topologika news

Over the summer, education software house Topologika has been working on some new titles and has moved to new premises in Cornwall. *Talking Clocks* (£35 single user, £60 site licence + VAT) is an aid to teaching children to tell the time, there are four new *Talking Rhymes* and there are new resource-packs for the Navigator package.

Topologika Software
Address: Islington Wharf, Penryn, Cornwall TR10 8AT
Tel/Fax: (01326) 377771

Early years of Acorn

No, it's not a history of Acorn the company, but a new range of packages aimed at young children. *Early Years* is a new computer deal from Acorn designed to give children a head start with learning and technology. The *Early Years* pack joins the existing range of solutions under the *Learning Curve* banner and starts with a £499 system based on the A3010 model without a monitor. Bundled software has been selected with youngsters in mind, like *Talking StartWrite*, talking books like *Doris the Dotty Dog* and look-and-learn games such as *Flossy the Frog*. Acorn estimates the value of the new software bundle to be £200 on its own.

Peter Talbot, Acorn's general manager for education, commented: 'Children are now using computers regularly in the classroom and it is only natural that parents will want to support their children's learning in the home. We expect substantial take-up of *Early Years* in the next few months as parents consider it as an educational yet fun Christmas present for their children.'

Other *Early Years* systems include the £749 A3010 with monitor, an A4000 system for £1099 and a Risc PC system for £1499. All prices include VAT.

Acorn has concluded a deal with P&O Ferries who will install *Early Years* systems on its two brand-new Portsmouth-Le Havre ferries. The systems will provide entertainment for youngsters during voyages, which typically last over five hours.

Acorn Computers Ltd
Tel: (01223) 254254

NEWS

Happy time at Creative Curriculum Software

CREATIVE CURRICULUM SOFTWARE in Halifax has announced five new educational titles under its Happy Matrix series: *Happy Time* (5-9 years), *Happy Sea* (3-6 years), *Happy Life* (4-8 years), *Happy Numbers* (4-8 years) and *Happy reading* (5-9 years). The titles contain games which can be played as either traditional board games or on the computer and are designed to strengthen elementary concepts in early child development, while keeping it fun. Each title has five games and is priced £34.95 inc. VAT.

Creative Curriculum Software
Tel: (01422) 340524
Fax: (01422) 346388



The Happy Matrix range from CCS

Nelson expands Acorn commitment

NELSON MULTIMEDIA has underlined its commitment to the Acorn platform with the release of four new education titles and the prospect of marketing titles from third parties in the future, according to Nelson Multimedia director, David Taylor.

The four new titles are *The Physical World, Aspects of Religion, Enroute* and *Max and the Machines*, all from ILP.

David Taylor told *Acorn User*: 'We are fully committed to the Acorn Platform which forms part of a three year production plan.'

Nelson Multimedia
Tel: (01932) 252211
Fax: (01932) 246109

The Acorn advantage

IF you'd like to help your local school obtain some free computers and other resources, why not buy an Acorn computer? That's the idea behind Acorn Advantage, the scheme for encouraging individuals to buy Acorn computers. These purchasers can earn points which can then be donated to schools of their choice. Schools can then redeem these points for a whole range of items, from computers and CD players to fax machines, televisions, musical instruments, sports equipment and books.

Acorn's sales and marketing director, Mike O'Riordan, explained: 'Acorn has launched the Acorn Advantage scheme to enable parents and schools to pool their resources to claim a range of free equipment. Acorn is committed to ensuring that children in British schools have access to the highest quality equipment available. By buying an Acorn computer for the home, parents can not only help their child at home but also assist their child's school to benefit in all areas of its activities.'

The purchases of 32 Acorn computers by members of the public from participating dealers would generate enough points for a school to claim a free violin, for example. Schools need to register for the scheme beforehand and other benefits, available to those who have registered, include discounts on national events training and conferences, plus there are free reports on educational/IT issues, magazine subscriptions and educational directories.

Acorn Computers
Tel: (01223) 254254

OUP news

AT BETT'95 in January, Oxford University Press will extend its range of Oxford Reading Tree Talking Stories, which are based on Sherston talking story technology, with the addition of Stage 2 and 3 titles. In fact, the new Stage 3 Storybook pack has just been released, while the Stage 2 pack, *More Stories A* will be released in January.

This brings OUP's library to 18 discs, with each of the new packs adding six discs apiece to the current six-disc pack which was launched at BETT'94 last January. Both OUP and Sherston will be showing the new packs at BETT'95. Each set of discs is priced £40 + VAT.

Oxford University Press,
Educational Division
Tel: (01865) 56767
Fax: (01865) 56646

New Acorn channel strategy

At the beginning of October, Acorn formally took over the business of supplying consumer dealers from long-time Acorn distributor, Hugh Symons Distribution. The move, which Acorn says had been planned with Hugh Symons, will be followed by a programme of marketing and other activities, with the aim of bringing Acorn closer to its dealer and customer base.

A new network of ten regional sales managers will conduct Acorn's new sales channel strategy. Authorised Acorn Education Dealers, supported by Acorn in Education Centres, will be able to add extra value to the products they sell. Mike O'Riordan of Acorn said: 'This change in our sales strategy will bring our product development and marketing that much closer to the people who actually buy our computers.' The relationship Acorn has with Hugh Symons is not totally severed, as Hugh Symons Group operates the large Acorn approved education dealer, Lansdowne.

No Hutchinsons

The latest and much-revamped version of the *Hutchinson's Multimedia Encyclopedia* will not be produced for the native Acorn platform. Although the previous version has been a popular title in the Acorn market, Helicon Publishing and Attica Cybernetics who produce the *Hutchinson Encyclopedia* decided that an Acorn version of the new 1995 version was not worthwhile. Apparently they feel it is Acorn's responsibility to make it easier for smaller multimedia production companies like themselves to provide for the Acorn market – or to become PC/Windows-compatible, in other words.

This contrasts strongly with the Acorn commitment from Nelson Multimedia (see above left) for example. The impact of Attica/Helicon's decision is somewhat neutralised by the expected introduction of Risc PC 486 technology later this year, but the news will surely be greeted by Acorn with some concern

Helicon Publishing
Tel: (01865) 204204

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REVIEWERS PRAISE IT... *"it's such a treat...it definitely deserves an Oscar"* [MARK MOXON, EDITOR, ACORN USER MAGAZINE]

THE COMPLETE ANIMATOR

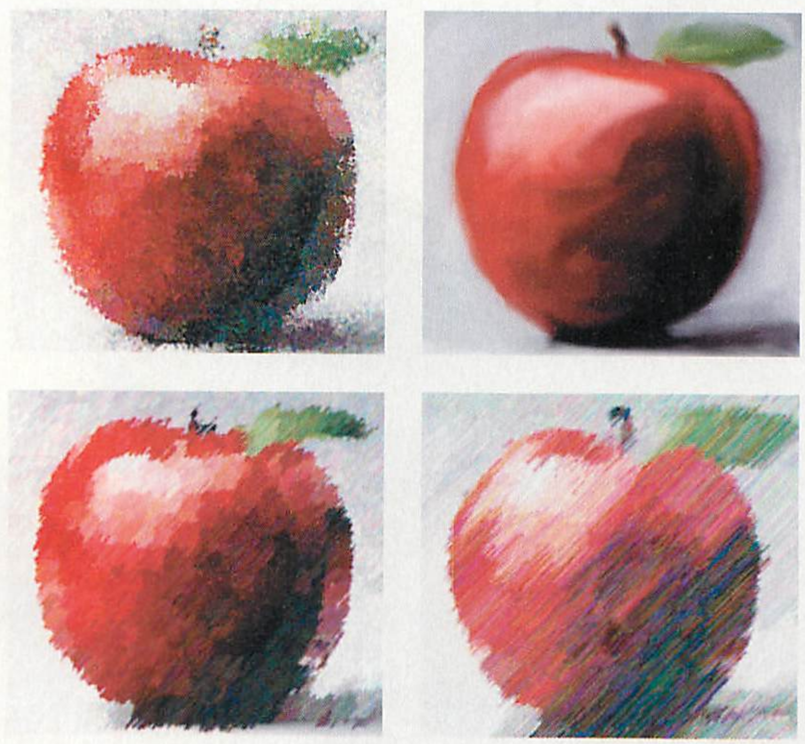
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Wellington Court. Cambridge CB1 1HZ
Telephone: (01223) 566789 Facsimile: (01223) 566788

IOTA SOFTWARE

PRO ARTISAN

24

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ProArtisan 24 is the latest development in the hugely successful Artisan series. Designed specifically for the Acorn Risc PC, ProArtisan 24 exploits the enormous artistic potential offered by allowing the use of 16.7 million colours for image creation and display.

This means that the computerised tools provided, such as chalk, water colours and pastels, mimic their natural counterparts very closely. Add to this ability to load Photo CD images in full 24 Bit colour and what you have is an exceptional painting package for your Risc PC, with the added benefits of many powerful image processing tools.

Acorn RISC PC

A fact pack is available which includes a demo version of the software.

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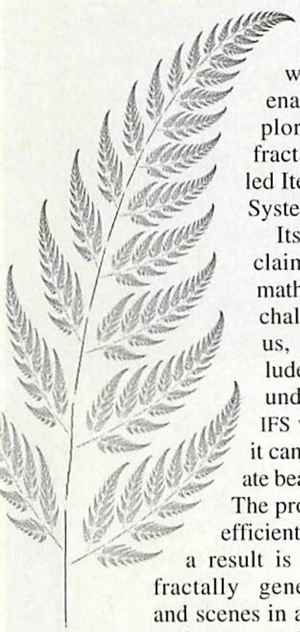
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Fractal power at your pointer tip

FRACTALS: by the end of the eighties they had wriggled their way into everything from weather forecasting to T-shirt designs, and now they're making a resurgence on the Acorn in the form of a package called *Montage*.



Montage is a fractal generation package, but no ordinary one. It is an incredibly well finished program – albeit *just* finished – which uses and enables you to explore the class of fractal objects called Iterated Function Systems: IFS.

Its author rightly claims that the mathematically challenged among us, myself included, can begin to understand how IFS works and how it can be used to create beautiful imagery.

The program has been efficiently coded and as a result is able to render fractally generated objects and scenes in a matter of seconds, except for the highest resolution and most complex iterations.

One of the most distinguishing aspects of the program over any other fractal generation package is that it allows you to simulate and construct natural objects and forms of practically infinite variety rather than predefined types. I should add that this is achievable with remarkable ease and speed.

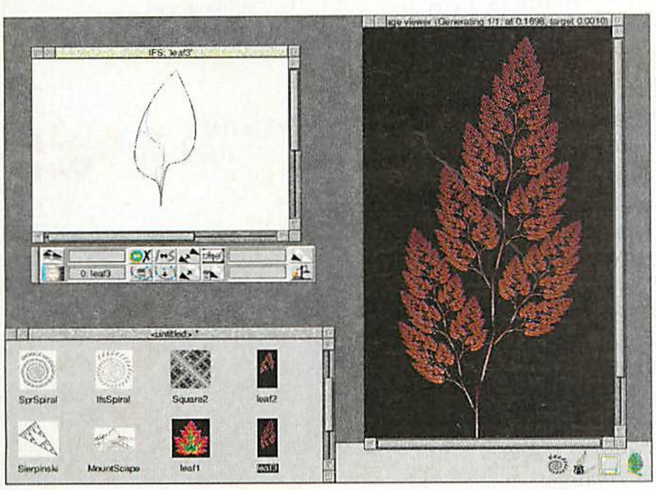


This image called Sunflower Field was a composite iteration created in *Montage* and is Picture of the Month for December. Created by Michael Rozdoba.

The 60-odd page manual covers everything from the history and development of IFS and of *Montage*, through terminology and jargon explanations and of course the program's features. In effect, the whole package with its own dedicated 'help' program, called *Guide to Montage*, strips away the mystery and confusion which surrounds the science of fractals and lets the layest of laymen not only produce marvellous imagery but also develop a grasp of this intriguing field of mathematics. Seeing as fractals, chaos and other related fields are playing an ever increasing role in science and technology, it seems that projects such as *Montage* will have a great deal of educational impact and value, as well as fulfilling its purpose for artistic creation.

Michael Rozdoba, the author, has not sealed any distribution deals so at time of writing at least, this remarkable culmination of four years' work remains officially unreleased. Until then you will have to wait patiently. We will keep you posted as to the progress of the package in the coming months.

Luddites Anon
Tel: (01670) 829950



Beautiful and intricate fractal imagery produced with ease and speed.

GT9000 from CGS

CGS, the sole distributors of Digital Arts products in the UK, will be launching drivers for the magnificent and long awaited Epson GT-9000 at Acorn World. The GT-9000 is the first 32-bit scanner in its class and has options for transparency and slide scanning, and a sheetfeeder. No one has yet seen this supposedly awesome scanner working on an Acorn, but if anyone can CGS can, with its wealth of experience in this field.

CGS ComputerBild
Tel: 0181-679 7307

Shady character

Looks like *PowerShade* could be back. The 3D editor looked to be the best thing since *ArtWorks* in preview but the project seemed to evaporate over a year ago. Let's see if The Serial Port deliver the goods this time.

The Serial Port
Tel: (01749) 670058

Pressure for pennies

The wonderful news that you can now enjoy the benefits of a pressure sensitive graphics tablet for less than two hundred pounds is this month followed by a special Acorn World show offer from Eesox and Vaughan Allanson. The two superb offers are for the new Wacom A6 tablet at £159 + VAT and P&P and the same tablet with the acclaimed 24-bit painting package, *Studio 24*, at a combined price of £239 + VAT. The offer will extend for one month and is excellent value for money.
The Eesox graphics tablet drivers are soon to include such advanced features as pressure control using bezier curves, orientation control and function customisation for key presses, colour picking and so on.

Eesox/Vaughan Allanson
Tel: (01638) 578597

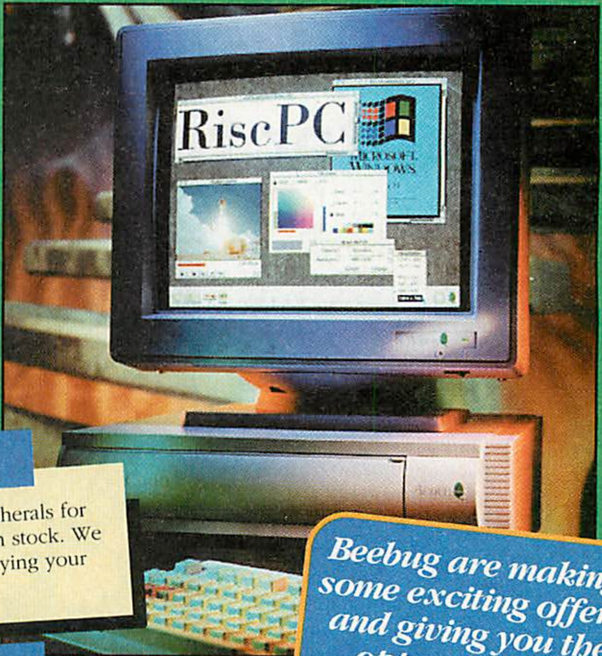
Contacting me

You can contact the Graphics Page by writing to me, Jack Kreindler at *Acorn User*, Europress Publications, Europa House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: jack@acornusr.demon.co.uk

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3044e	1Mb VRAM (Only for ACB15)	£129.00
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Birthday spectaculars at the Silicon Village party

REMEMBER, remember the twelfth of November? You don't? Well, about 4000 enthusiastic users of Silicon Village will know the date as the third birthday of this thriving Viewdata system.

Silicon Village is a sort of online cyber-community, with shops, clubs, art gallery, church and recreation areas that are accessible by modem from all over the country.

On this special birthday occasion, villagers will leave their terminals at home and come out to enjoy their traditional firework spectacular and bonfire party in Maidenhead, Berkshire.



A byte or two to eat at the Silicon Village firework spectacular.

The fireworks will be accompanied by synchronised music and lights, and the villagers and their families will enjoy free food and drink supplied by the organisers of this ticket-only event.

A major attraction in the Silicon Village recreation area is the Multiuser game Avatar, now about to enter the third scenario.

The new game, Avatar III – The Crypt, is much larger, with many more locations, monsters and puzzles to solve than the previous games, providing brand new game play and playing techniques for those who choose to use magic rather than physical prowess.

A programme of modem upgrading is in progress, allowing some 28,800bps connections at no extra charge to subscribers.

A Village Direct account offers unlimited access with no time charges for a £20 + VAT joining fee and £10 + VAT monthly subscription. For a free demo, dial one of the numbers, press # then type SVDEMO#.

Silicon Village
Modem: 0181-759 2348
(Viewdata 1200/75bps 7E1)
0181-759 6996 (all speeds)
(01734) 819000 (14400bps, Reading node)

Hats off to Plymouth Sou'wester Digitax BBS – it's Acorn specific

DIGITAX BBS, billed as the best Acorn interest BBS in the south-west, is run by Sysop Graeme Read from Plymouth.

Drawing on earlier experience of running a BBS, Graeme has planned Digitax to offer extensive messaging and file areas, including hundreds of FidoNet message and file echoes.

Digitax is on the FidoNet network as 2:255/75.0, and is also part of the new European RiscNet network. This is intended to be an FTN (Fidonet Technical Network) technology Acorn-specific network, linking Acorn interest bulletin boards across Europe in Holland, the UK and Switzerland. Digitax has been allocated the RiscNet address 7:4407/203.0.

According to a recent Zone list I have seen, FTN Zone 7 is already allocated to at least two other networks based in the US, so RiscNet may need to reassign its Zone number, particularly if FidoNet should expand above Zone 6. One wag in the BBS Echomail areas who apparently thought otherwise, suggested this FidoNet zone might soon be allocated to the moon. Back on Earth, Zone 700 appears to be unused as yet and a possible zone for occupation by RiscNet.

Digitax BBS runs *ARCbbs* on an A4000 with 4Mb RAM and its 80Mb hard drive with modem speeds up to 14,400bps. Graeme says that a larger hard drive is coming soon.

Other Digitax features planned include a PD programming group, Internet access, online games, ANSI animations and special help system for BBS callers. Digitax is online 24 hours on (01752) 482514.

Learning old rope?

Data-Tech Business Resource Centre Ltd is offering two-day seminars on 'Accessing the Internet', during which it is promised you will learn many things, including how to start up a SLIP connection, install TCP/IP software, and gather information using the World Wide Web. Sounds like just the job for newcomers to the I-ways?

But, can you believe this, the course fee is £795 + VAT! If you're still interested, phone the Registrar on 0181-780 2412/2414 (or you could just keep buying *Acorn User*).

Order up an e-pizza

When you're engrossed in e-mail or nosing through news, it's easy to forget mealtimes.

The answer is to order an electronic pizza, and have it delivered right to your terminal in minutes.

For a really nice looking pizza, send e-mail to pizza@ecst.csuchico.edu with the subject 'pizza uuencode' and put the text 'medium pepperoni and olives, half salami and mushroom' in the message body. Reply 'Re: pizza' to the verification message, and you'll receive the pizza as a byte-sized GIF file. If you don't believe me, send 'pizza help' to the same address.

Same BBS, different number

Just after my report on Archipelago BBS went to press last month, Sysop Roy Moore was given the chance to upgrade his BBS phone line to a digital exchange, so understandably he decided to accept the change of number, which is now (01255) 240735.

Contacting me

You can contact the Comms page by writing to me, David Dade at *Acorn User*, Europress Publications, Europa House, Adlington Park, Adlington, Macclesfield, SK10 4NP. By e-mail to: DaviD@arcade.demon.co.uk or Netmail to DaviD Dade FidoNet#2:254/27.0 or mail #2 on Arcade BBS 0181-654 2212.

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Save over £42

NEW - The Early Years Pack

This new pack has been designed especially for children of pre-primary to end-primary age. It includes Talking Start-Write, Explore with Flossy the Frog, Mouse in Holland, Doris the Dotty Dog, Gemini, Amazing Maths and Paint Pot. This is an excellent pack that will bring the computer to life for younger children.

£42.55



The Learning Curve Pack

This package is ideal for the home. It includes Advance, the new integrated word processor, spreadsheet, database and graphics suite. In addition DR DOS 6 and the PC Emulator are included to enable you to run DOS programs. An audio training tape and demo versions of another 8 educational programs are included.

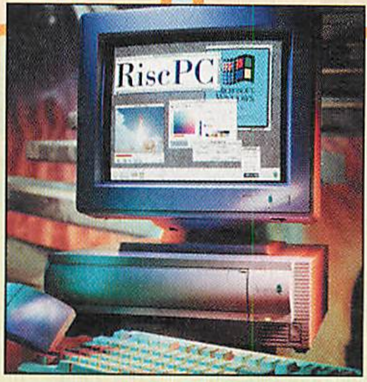
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The Home Office Pack

An excellent pack for the professional looking to use the computer for more serious applications. It includes Pipedream 4, EasiWriter, DataPower, DR DOS 6 and the PC Emulator. Also included is an audio training tape and demo versions of Prophet Accounts and Almanac personal organiser.

£85.11



RISC PC

The RISC PC is the latest computer in the Acorn range and represents a complete breakthrough in technology at an extremely competitive price. It features the new ARM610 super fast processor, can take up to 256Mb RAM, is supplied with a 14" SVGA monitor and in three configurations.

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The Acorn Pocketbook II

This is a hand-held computer with built-in wordprocessor, diary, spelling checker, spreadsheet, database and calculator. It offers a larger screen than the original Pocketbook and with the A-Link it can be used to transfer data to other Acorn systems. Available with 256K for **£229** or 512K memory for **£280**.

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DTP

The competitive edge

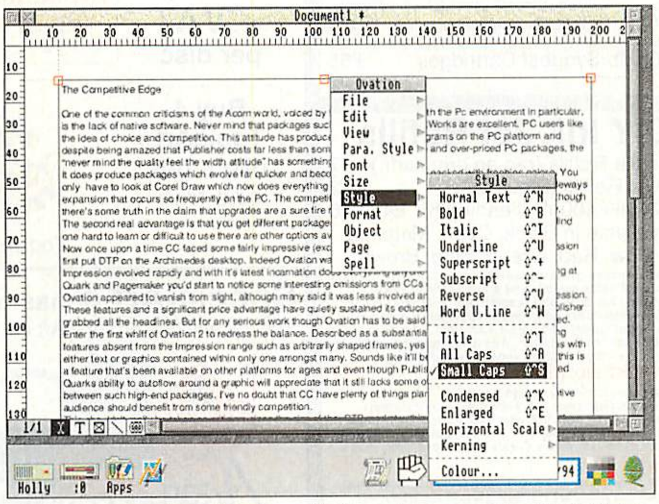
ONE of the most common criticisms of the Acorn world, voiced by those more familiar with the PC environment in particular, is the small number of native software packages compared to the huge amounts available on the Mac and PC platfprms. Never mind that packages such as *Publisher* and *ArtWorks* are excellent: PC users like the idea of choice and competition, and they've got it.

This attitude has produced dozens of DTP programs on the PC platform and despite PC users being amazed that *Publisher* costs far less than some woefully inadequate and over-priced PC packages, the 'never mind the quality feel the width attitude' has something to be said for it.

It does produce packages which evolve far quicker and become ever more feature-packed with freebies galore. You only have to look at *Corel Draw* — which now does everything from scanning and OCR to page layouts — for the sideways expansion that occurs so frequently on the PC. The competition between PC packages keeps them evolving, although there's some truth in the claim that upgrades are a sure-fire money spinner and as such are abused extensively.

The second real advantage is that you get different packages which do the same thing in different ways. If you find one hard to learn or difficult to use, then there are other options available.

Once upon a time Computer Concepts faced some fairly impressive (excuse the pun) competition when *Ovation* and *Impression* first put DTP on the Archimedes desktop. Indeed, *Ovation* was possibly the better of the two initially, but *Impression* evolved rapidly into *Impression II* and the latest incarnation, *Impression Publisher*, apparently does everything anyone could want (see review on page 40 of the professional version, *Publisher Plus*). However, looking at



Ovation – soon to be updated to make it a serious competitor for *Publisher*.

Quark and *Pagemaker* on the PC and the Mac, you'd start to notice some interesting omissions from CC's offering.

Ovation appeared to vanish from sight, although many said it was less involved and far easier to use than *Impression* – a fair point until *Impression Style* introduced the delightully simple button bar. But *Ovation*'s features and a significant price advantage have quietly sustained its education sales while *Style* and *Publisher* grabbed all the headlines. In fact, at only £69 + VAT, *Ovation* is is quite a lot cheaper than either of the *Impression* packages, but for any serious work, *Ovation* has to be said to be somewhat underpowered.

Enter the first whiff of *Ovation 2* from Beebug to redress the balance. Described as a substantial improvement, it will be offering features absent from the *Impression* range such as arbitrarily shaped frames; yes, curves as well as straight lines can be constructed with either text or graphics contained within, something that *Impression* can't do despite the best efforts of the Letters page to prove otherwise.

However, this is a feature that's been available on other platforms for ages and even though *Publisher* is good, anyone who's used *Quark*'s ability to autoflow around a graphic will appreciate that *Publisher* still lacks some of the polish that differentiates between such high-end packages.

I've no doubt that Computer Concepts has plenty of things planned for *Impression* but a captive audience should benefit from some friendly competition.

This shouldn't really be taken as criticism since the size of the DTP market within the already small Acorn market means that recouping development costs is by no means a foregone conclusion.

I appreciate that Acorn software developers can't dedicate scores of programmers to a single project as appears to be the case on other platforms. But anything that spurs our software on is good since complacency is the worst and most insidious enemy to Acorn's ambitions in a very rapidly moving environment.

So, will some competition take our packages from strength to strength, or will the limited size of the market shackle them both? I would hope that as Acorn breaks out beyond its traditional markets and captures new ground there will be plenty of room for both. It'll be interesting to see an early version of *Ovation 2* at the show.

Beebug
Tel: (01727) 840303
Fax: (01727) 860263

Acorn Publisher

A new subscription magazine for those using Acorns for DTP – be it glossy brochures or parish newsletters – will be available at the Acorn World show.

The bi-monthly magazine will be called *Acorn Publisher* and apart from showing you new ways to use your Acorn it will be entirely produced on the Acorn platform.

Akalat Publishing
Tel: (01582) 881614

Repro house

I recently stumbled across another Acorn friendly repro/printing house practically on my door step. Perhaps there are hundreds of them out there hiding behind Apple Mac logos, but then again perhaps not. Based in Bath, Micro Laser Designs offers a full range of scanning, proofing and printing services as well as a user group. If you've stumbled across any other Acorn literate repro/printing houses let us know.

Micro Laser Design
Tel: (01225) 833266

Pudding proof

After receiving quite a lot of criticism from readers when we moved to Europress and started to produce the magazine on a Mac, you'll be glad to know that the supplement bound to this issue was produced entirely on a Risc PC. All the scans were cut out in Spacetech's *Photodesk* and the layouts were completely produced in CC's *Impression Publisher Plus*.

In fact the only time a Mac was used was to send the PostScript files generated on the Acorn to the film machine on the Apple network, and then the Mac was only acting as a dumb terminal. How apt.

Contacting me

You can contact the DTP page by writing to me, Steve Powell at *Acorn User*, Europress Publications, Europa House, Adlington Park, Adlington, Macclesfield, SK10 4NP, or by e-mail to: stevep@arcade. demon.co.uk

Showroom open Mon-Sat 10-18.00 hrs (All prices exclude VAT)

CD-ROM



All the following CD-ROM drives are Toshiba units and are PhotoCD compatible (multi-session) and include a driver for CDFS =>2.20

Internal Drives (RiscPC only)

XM-4401B Tray 300ms, 300kb/s	£200
XM-3401B Caddy 200ms, 330kb/s	£250
XM-3501B Caddy 200ms, 600kb/s	£375

The above do not include SCSI interface, see below.

External Drives (for all machines)

XM-4401B Tray 300ms, 300kb/s	£275
XM-3401B Caddy 200ms, 330kb/s	£325
XM-3501B Caddy 200ms, 600kb/s	£450

The above do not include SCSI interface, see below. Add an extra £25 for A3000 for podule case.

SCSI cards

Morley uncached SCSI card	£130
Morley cached SCSI card	£170
Cumana SCSI II card	£200

The above cards are suitable for A300, A400, A3000 (Ext), A540, A5000 and RiscPC. For others see MultiPodules.

Hard Discs

A5000/RiscPC 2nd Internal Drive

210Mb IDE 14ms Cache (~1Mb/s)	£159
420Mb IDE 14ms Cache (~1.5Mb/s)	£259
540Mb IDE 12ms Cache (~1.5Mb/s)	£399

The above include all cables, screws and instructions. All the above drives are Connor as used in the RiscPC

A300/A400 Series Internal (IDE)

210Mb 14ms Cache (~1Mb/s)	£239
420Mb 14ms Cache (~1.5Mb/s)	£339
540Mb 12ms Cache (~1.5Mb/s)	£479

The above include all cables, screws and instructions. Add £79 for ext case and/or £25 for A3000 podule case. **All the above drives are Connor as used in the RiscPC**

Syquest Drives

IDE 105Mb Internal for A5000/RiscPC	£259
(Above Includes one cartridge, cables & driver software)	
SCSI 105Mb External for all Machines	£349
(Above Includes one cartridge, exclude SCSI card)	
105Mb Syquest Cartridges	£55

TopicArt

Single disc clipart containing approx. 50 high quality draw format clip art images, each on a single subject. Comes with mono reference sheet. 12 subjects are available now. Please specify when ordering. Site licences are £16+VAT per disc, please ring for further details.



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9 - Dinosaurs
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TopicArt catalogue now available. £1.50 Inc VAT & p+p (cheques only)

Buy 4 TopicArt discs get one free
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TopicArt12 - AnimalsGB



TopicArt4 Entertainment

QuickTile v1.02 £25+VAT



Up until now it has only been possible to print posters from Draw & Sprite files. Now with QuickTile you can create posters from ANY RISCOS application, including Impression. Simply enter the size of poster required & select PRINT from the application! QuickTile does the rest, printing each tile with crop marks and tile references. RiscPC compatible.
Requires RISCOS 3.10 or later.
Return Disc with SAE for upgrade.
Upgrade from Tiler for £15+VAT.

DIY Ink Jet Refills

Single Refills (req an orig cartr.)	£7
Twin Refills (Black only)	£12
125ml / 400ml Cleaning Kit	£4 / £10

Available in Black, Cyan, Magenta, Yellow, Red, Green, Blue, Brown

Please specify colour(s) required when ordering.These do-it-yourself refills can be used with any printer where the head and ink reservoir are combined, ie, DJ-500, BJ10/200. Please do not send empty cartridges. Please note that colour quality may not be 100% from a black cartridge refilled with another colour. We cannot guarantee against dried up empty cartridges and/or blocked nozzles.

QuickSound £10

Load, play, convert & resave Armadeus, Tracker and raw data sound samples. Apply special effects including Reverse, Echo, Max Vol, alter replay rate and resample frequency. Convert samples into modules for use with the RISCOS sound system. Create stand alone Utility mod's.

QuickShow £25

Slide show presentation and video titling package. Create sequences of frames containing text of any colour with drop shadows, outline shadows and rubout boxes using the RISCOS fonts. Sprites can also be included in frames, positioned and resized as necessary. Screens can be linked together with the sequencer with fades in and out.

SpecialArt (Xmas or Signs) £20+VAT (each)

Special editions of TopicArt consisting of a minimum of 4 discs full of clipart





Hardware, Software & Books (All prices exclude VAT) See us at Acorn World '94, Stand 86

All RiscPC's include 1yr on-site maintenance. **0% and low finance available.** We operate Acorn Assist for teachers & academics. **We now have many RiscPC systems in stock for immediate delivery.**

RiscPC 2MHD210	**£1199**
2Mb DRAM, 210Mb HD, AKF60 Monitor	
RiscPC 5MHD210	**£1299**
4Mb/1Mb D/VRAM, 210Mb HD, AKF60 Mon.	
RiscPC 9MHD420	**£1599**
8Mb/1Mb D/VRAM, 420Mb HD, AKF60 Mon.	
Add £400 to above for 17" AKF85 Monitor	

RiscPC Upgrades

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16Mb Simm RAM	£425
32Mb Simm RAM	£POA
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1 to 2Mb VRAM Upgrade (exchange)	£Call
486 PC Upgrade (available ~Oct 94)	£99
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2nd Slice Case Upgrade	£99
Acorn Access for RiscPC	£119
Ethernet Interface Card	£99

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A3010 Action Pack 1Mb RAM	£319
A3010 Action Pack 2Mb RAM	£339
A3010 Learning Curve with AKF30/40	£599
A3020 2MFD/AKF52 MultiScan System	£699
A3020 2MHD60/AKF52 MultiScan Sys	£849
A4000 2MHD105/AKF52 MultiScan Sys	£879
Add £55 for AKF50 Monitor (not A3010)	

Software Packs

Learning Curve	£42
Includes Acorn Advance & PC Emulator & demos of Applications & Games	
Home Office	£85
Includes EasiWriter2, DataPower, PipeDream4, PC Emulator & demos	

The above software packs are ONLY available with any of the above computers except the A3010.

Portable Computers

Acorn Pocket Book (256k)	£169
Pocket Book II (256k)	£229
Pocket Book II (512k)	£279
Psion 3a (512k)	£249
A-Link (requires RiscOS 3.1)	£42
PC Link (for IBM PC compatibles)	£60
Parallel Link for Pocket B'k or Psion 3/3a	£26
P Book/Psion 3/3a Mains Adaptor	£15
128k RAM SSD	£43
256k Flash SSD	£47
512k Flash SSD	£77
A4 Portable 4MHD60 with PC Emulator	£1599
A4 Spare Battery (Including carriage)	£55

Remember, Carriage is free on most items

Monitors

Acorn AKF52 14" 0.39dp MultiScan	£250
Acorn AKF50 14" 0.28dp MultiScan	£310
Acorn AKF60 14" 0.28dp MultiScan	£325
Acorn AKF85 17" 0.28dp MultiScan	£649

Hardware Upgrades

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See also top of page for other hard discs and Syquest Removable Drives

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A300/A440 Series (inc carrier board)	£97.88
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Bulk Pack of ten upgrades	£339.00

Please add £4 (Inc VAT) carriage to RiscOS

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Canon BJC-800 Turbo	£1150
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HP 92274A Toner (HP LJ4L)	£59
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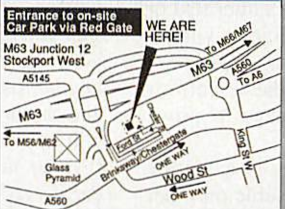
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RiscOS 3 First Steps (Dabs)	£14.95
Add £2 Carr to above (£4 for Acorn books)	

Terms

EC residents add 17.5% VAT to all prices except books. Carriage free in UK (excluding remote areas) (except books), elsewhere at cost. Orders MUST be accompanied by a phone number. Prices and spec's subject to change without notification. Goods subject to availability. Goods not offered on trial basis. Restocking fee on non-faulty returns. Official orders welcome from educational institutes, chq with order under £30. E&OE.

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Desktop Projects Ltd

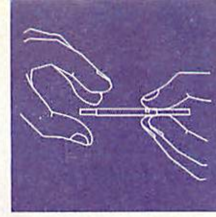
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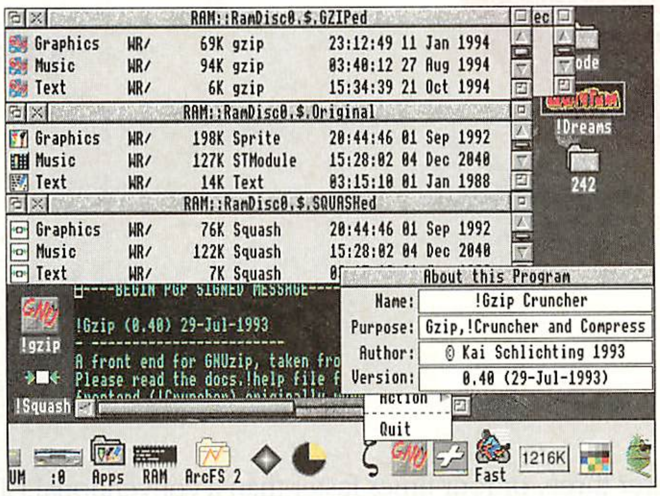
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Squeezing 'em in



Crunch your files with *GZip*.

COMPACTION programs have always been a popular subject for Public Domain coders, and a new LZW packer by Kai Schlichting is continuing the support for this area. *GZip* is a front-end for *GNUzip*, originally used in *Cruncher*, and is based on the LZWD module frequently used in PD applications and demos.

GZip is not an application which can compete with archived filing systems like *ArcFS* and *Compression*, as compacted files cannot be used until they have been decompacted to their original state. However, when used to squash down infrequently used files, or even as a backing up tool, *GZip* is very useful.

Multiple files can be dragged to the icon bar to be compressed, and *GZip* will even handle whole applications.

Although there are a variety of tried and tested compaction algorithms available to coders, LZW seems to have been the most popular on Acorn machines. *GZip* has continued the trend with yet another desktop archiver using this form of compaction. Inevitably, this places it in direct competition with Acorn's *Squash* utility.

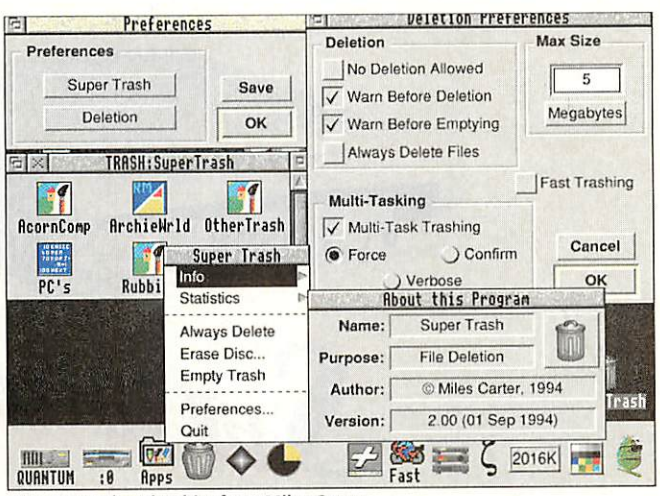
Despite the obvious advantages of having the *Squash* module in ROM, *GZip* compares favourably in terms of both speed and compression ratio.

The fixed 12-bit format used by *Squash* did not perform as well as the variable settings available with *GZip*.

Speed-optimized *GZip* settings produced timings that were similar to *Squash* but with better compression ratios. Doubling compression time reduced the compressed file size even more.

GZip can be found on disc U38 from Five Star Marketing.

SuperTrash



It's yet another dustbin, from Miles Carter.

Super Trash is yet another desktop file deletion utility that has been pitched into the scene by Miles Carter to compete with current trash leaders *BlackHole2* and *TrashFS*. Surprisingly, both of the two older dustbin programs were completely free to distribute, but *Super Trash* is available as a slightly cut down Shareware demo and as a fully registered version costing only £1.

Miles's program has been specially written in ARM code to achieve maximum speed of execution and the performance of the program when 'wiping' large numbers of files is indeed very fast.

In terms of features, *Super Trash* is not as well endowed as the detailed *BlackHole2*, but control over the basic operation of the program is possible via the preferences window. Use of the multitasking filer windows is fully configurable and highly useful.

Due to the fairly streamlined format of the program, *Super Trash* is not as adept at managing your deleted files as *BlackHole2*, but as an applicaton designed to take a permanent and much used place on your icon bar, it is a good buy. Loading time (important when the program is a permanent fixture in your boot up sequence) is practically instant, and the module-based code takes up only 20K of precious memory. A registered copy of *Super Trash* is available for only £1 from: The Birches, 25 Beech wood Crescent, Chandler's Ford, Eastleigh, Hampshire SO53 5PE.

New disc mag

A new project from Rupesh Patre should bring much needed competition to the non-PD disc mag scene. PD Review Magazine, a disc-based production devoted entirely to the Acorn PD scene, will be available in the new year. The two main objectives of writing for and about the PD scene, but at the same time charging for the magazine, seem slightly incompatible, but I'll await judgement until I've seen the sample issue available in February.

Subscription costs £11 or £3 for an individual issue. For more information contact: PD Review, 20 Ash Priors, Parklands, Widnes, Cheshire WA8 9NH.

PD support

So far, very little has been produced in the public domain scene to take advantage of the new Risc PC, which I find very surprising. It obviously takes time for the new technology to filter down to both a reasonable user base and more importantly to the coders themselves. Perhaps the high spec expandible machines currently available are too costly for programmers based in a budget software environment.

Despite this, support for new machines and upgrades (like RISC OS 3) in the past has always been good. What strategy Acorn chooses for replacing the current low-end ARM250 based machines may well be decisive in starting the move to 24-bit graphics in the scene. In the meantime, the public domain will continue to support the largest user base, using RISC OS 3 machines which will no doubt continue to be a popular target for its software.

Contacting me

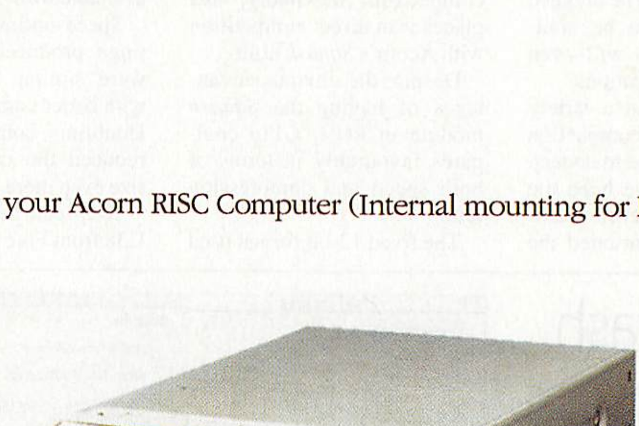
You can contact the Public Domain page by writing to me, Paul Wheatley at *Acorn User*, Europress Publications, Europa House, Adlington Park, Adlington, Macclesfield, SK10 4NP, or by e-mail to: Paulw@arcade.demon.co.uk

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Acorn WORLD

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Drives require Acorn Compatible SCSI Interface & CDFS 2.2. Prices exclude VAT & carriage. E & OE. Trade enquiries welcome.

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It also prints out delivery information for paperboys and, if a customer is on holiday, can save magazines at the shop for him/her or cancel the order, just for that issue.

However, if you add a scanner – there are three to choose from – with a till drawer and a column roll printer, your Acorn effectively becomes a till, and has all the features described above.

The A3010 is the most common of these revolutionary till systems, while other Acorn computers are available at an extra cost. Much to Acorn's disgust, the software runs in screen mode 7.

However, according to Ken Humphreys of Iver Computers, this is an advantage as it eliminates the requirement for a mouse.



You'll get a strange look if you ask for a PC magazine...

The systems are cheaper (and much faster) than their PC counterparts, with around 60 having already been sold.

It emerges that when the employees of Acorn decide to have a rest, magazines are bought from the local newsagent and the bill is sent monthly to Acorn, having been worked out on the old BBC version of the software. It's a small world, really.

If you're interested in buying one of these systems, a brochure is available from Iver Computers and demonstrations can be arranged.

Iver Computers
Tel: (01753) 651990

Paying for support – at a cheaper price

HAVE you ever been harassed by multi-billion dollar companies trying to con you into paying for telephone support?

Well, okay, the PC world isn't quite that bad, but some companies aren't very gentlemanly in the way they get their customers to pay for support.

A certain PC software company, which shall remain nameless, advertises its products as easy to use on the side of the packaging.

However, after registering, you'll receive a letter telling you that this is not the case and, by the way, if you don't pay a 'modest annual fee' for telephone support you're on your own. No matter what the problem is, the company won't help you.

Incidentally, that modest annual fee is £282. It may not be much for a business to pay, but how much does an occasional question cost?

So what about the Acorn marketplace? *Enterprise Professional*, which is a double-entry book-keeping package like *Sage Sterling*, is one of the very few packages which does have an annual support charge.

However this is only a meagre £35 and ACP Ltd – which sells it – has never, and never will, send away customers who have problems. You'll just receive a nice comment about paying for support in future.

Colton Software, on the other hand, has absolutely excellent support but does not charge a penny. Perhaps that's why it's sold so many of its products: good software – having looked at packages for other platforms – good advertising and, above all, excellent support for absolutely nothing.

I don't entirely agree with paying for support. However, as long the cost is small, and is not forced upon us, businesses will pay for it.

There must be some PC users who ask a lot of questions...

Data protection

Did you realise that your company may need to be registered if you keep personal information on computer? A free 15 minute video is available from the Data Protection Registrar explaining whether or not you are required to do so. You are strongly advised to obtain a copy of this video by phoning (01625) 535777.

Take your share

Just when you thought *Shares* from Apricote Studios was good, *Shares* has been released. Confused? Just to be original, Mr. Parker, who programmed and now markets his own shares program, decided to give it an identical name to the package from Apricote. *Shares* requires a teletext card and obtains its information via Channel 4 teletext.

Mr Parker
Tel: (01661) 834464

Blasted accounts

Having just read last month's *Acorn User*, I now expect to get a sack full of letters complaining that to correct a mistake in a non-editable accounts package you should use a journal entry. So why did I mention credit notes?

The problem is that the average person doing his books doesn't have a clue how to post a journal entry to the nominal ledger until they've played with the package a little. And playing with some accounts packages isn't exactly fun. So they don't.

Credit notes *can* help you if you've totally messed the accounts up and can't be bothered to enter it all in again. However, you should really start from your last backup. In the long run it's probably less hassle not using fake credit notes as you don't get people accusing you of cooking the books.

Contacting me

You can contact the Business page by writing to me, Alex Singleton, at *Acorn User*, Europress Publications, Europa House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: alex@acornusr.demon.co.uk



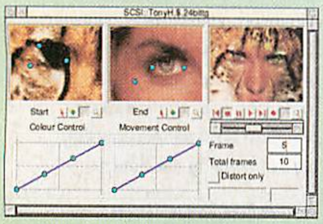
!Rephorm takes two sprites of any size and allows a morph to be generated between them. You simply identify a number of key control points on the start sprite and reposition them to similar places on the end sprite. Rephorm calculates so quickly that the effects of repositioning control points can be seen in real time as you drag them! All calculations are performed in the background so Rephorm never stops the machine from multitasking. The user interface has been widely acclaimed for both its simplicity and its versatility. The morph can be displayed on screen, saved to disc as either an Ace Film or an Acorn Replay file, or individual frames or groups of frames may be saved as sprites.

Since its launch last year, several extra features have been implemented. Chief among these is Object linking and embedding (OLE). Control-double-clicking on any sprite within Rephorm will automatically transfer it into !Paint (or another painting package) for editing. Saving the edited sprite from !Paint will instantly transfer the sprite back into Rephorm, which will then recalculate the effects of the change.

Rephorm has always supported the 16 and 32 bit sprite file formats for the new Risc PC, but a new utility, !UnClear, allows the now obsolete 'ClearFiles' to be converted into sprites for use with Rephorm. Another utility, !Splitter, will split a SpriteFile containing a number of sprites into individual sprites.

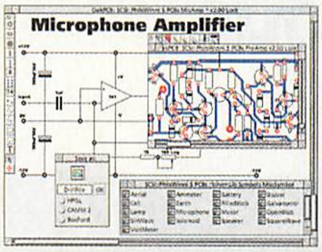
As well as being able to produce morphs and distortions of images, Rephorm can also produce video style special effects such as fades and wipes. These are useful for those people creating and editing Acorn Replay films, providing interesting ways to join two clips together.

Rephorm costs £50
Upgrades to version 1.04 £15



Rephorm

OakPCB II



Having enjoyed considerable success as both a stand alone application, and as part of Design Processor, OakPCB has recently undergone its first major revision to become OakPCB II.

The changes made have been generated as a result of user feedback, and also to take advantage of the improvements which have been made to the operating system since the application was launched under RISC OS 2.

As ever, the user interface to OakPCB is based very closely on !Draw, and users familiar with that package will find no difficulty in getting to grips with the business of creating and editing both schematic diagrams and printed circuit board layouts. OakPCB can handle anything from simple single layer boards all the way up to 4 layer. Comprehensive (and extendable) libraries are provided for both PCB and schematic work.

By default, OakPCB aligns tracks in multiples of 45°, although this feature can now be turned off to allow tracks to be placed at any angle if required. Visual feedback is given whilst in this mode and when editing tracks, so that the tracks change colour when they are aligned at 45° intervals.

A new utility called PCBDrill is supplied which allows circuit boards to be drilled automatically on the Roland CAMM 2 and CAMM 3, and also on Boxford milling machines. Oak PCB II runs on all RISC OS computers including the new Risc PC. It outputs to Plotters and RISC OS printer drivers via Draw Print & Plot (supplied).

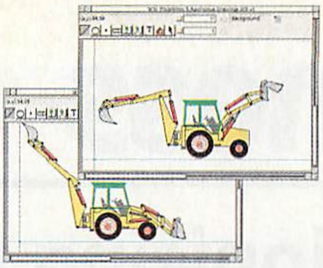
OakPCB II costs £70
Upgrades cost £35



OAK SOLUTIONS

Dial House Chapel Street
Halton Leeds LS15 7RN
Tel: 0532 326992Fax:
0532 326993

Prices shown include P&P but exclude VAT



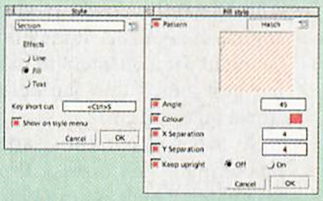
Apollonius PDT is a fully parametric 2D CAD environment. However the user interface differs considerably from conventional wisdom. Normally CAD packages are cluttered with an abundance of methods for drawing each type of object. For example the circle tool will have variants such as Centre/Circumference, Centre/Radius, Radius/Tangent to 2 objects, Three point etc. With Apollonius PDT there is only one Circle tool, but the interface is sufficiently intelligent to know what type of circle you are trying to build by which objects you click on. Indeed the number of options is larger than in most CAD packages.

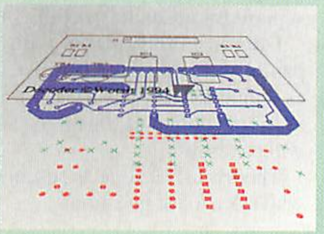
Other noticeable differences are the apparent lack of short line segments and arc tools. Both of these are instead replaced by an 'intelligent pencil' which allows the draughtsperson to draw round the relevant parts of construction lines in one quick operation.

Being parametric, the package allows the designer to answer 'what if' questions very rapidly. The whole drawing will be recalculated and redrawn as you change the positions or sizes of key objects, or even the geometrical relationships between them, by simply dragging any item around the screen.

Altogether, Apollonius represents a radical new way of doing CAD. It makes it possible to create clear, flexible, accurate designs, with the minimum of training. The amateur user benefits from the amazing ease of use, while the professional benefits by its unrivalled parametric power.

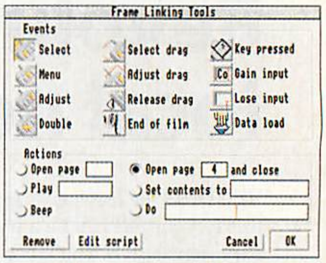
Apollonius PDT costs £150
Upgrades from WorraCAD and Oak PDT £75





Apollonius PDT

genesis



Genesis Professional and Project are the successors to Genesis II and Genesis Plus and feature greater power, speed, and ease of use. The Genesis menu structure has been simplified by using dialogue boxes to alter the style of frames and pages. Master pages can now be created and added to a library. Application creation and editing has been eased by the introduction of 'Object Linking and Embedding'.

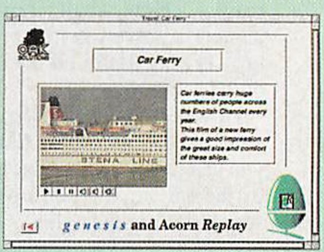
New data types have been incorporated into Genesis, which now supports Artworks, Replay, Windows .BMP and .WAV files. Predefined control buttons can be added to Euclid, Film, Replay and Sound frames. A 24 bit colour model is used throughout and Genesis can handle the new 15 and 24 bit Sprites. The speed at which Genesis pages load has also been increased significantly.

Genesis Professional provides support for Laservision players and for CD. Its powerful Script language has been extended with a host of new keywords and now supports global variables.

Genesis Project is a friendly multimedia authoring system which provides sufficient power to satisfy the everyday needs of most users. Applications authored using Genesis Project are, of course, fully compatible with Genesis Professional so that they can be used as the basis for more complex work. Genesis Project differs from Professional in two significant ways. There is no access to the script programming language, and the overall program structure is simplified with fewer menu options and a reduced range of linking tools. This makes Genesis Project less daunting to the novice user than its big brother, whilst allowing progression to Genesis Professional at a later date.

Upgrades are available from all previous versions of Genesis (including Learning Curve), telephone for details.

Genesis Professional costs £120
Genesis Project costs £50



Network and multiple CD-ROM drives

IN the July issue – The Network Special – I explained the difference between the two types of 'multi-disc' CD-ROM drives currently available. The first is the multiple drive type; effectively a number of single drives (usually six) in one housing. The second is a single drive housing a magazine containing six discs which are swapped by an auto-change mechanism within the drive.

At the time I wrote the articles, auto-change drives were very new and as I hadn't had chance to use one on a network I couldn't comment on its suitability, even though I was fairly certain I knew what the outcome would be. As my parting shot, I left the user to draw his/her own conclusions as to which would be better with a network.

Paul McKinnon of Cumana let me try both types on the school network and I can now confirm that my original suspicions were correct. Being as generous as possible, auto-change CD-ROM drives will work over a network but can be very slow.

This device can only read one disc at a time and if a second disc is called for it can result in a 'contest' where the drive is spending more time changing discs than reading data. Each disc change – which includes dismounting one disc and mounting another – takes between eight and ten seconds. Although more expensive – more than double the price – I feel that six single CD-ROM drives puchased either singularly or in a tower is a far better option for a network.

However the auto-change system is a cheap alternative if you understand and accept all of the limitations.



A very fast CD-ROM drive – but is this really suitable for a network?

Cumana
Tel: (01483) 503121
Fax: (01483) 531371

Puzzling Draw files

ARCH ANGEL has just released Volume one of the *Drawfile Puzzle Collection*. For £4.99 you get a disc containing 57 puzzles, 30 teasers and eight wordsearches. Some are quite easy, while others are very tricky.

Maths teachers (KS1-3) will find much of this material very useful. Some of the puzzles work best in *Draw* format, while some are best printed and worked out on paper.

If you think you might like to run them on a network of over ten computers you'll need to pay an extra £10, which still makes the *Drawfile Puzzle Collection* a very good buy indeed.

Arch Angel
Tel: (01392) 422759

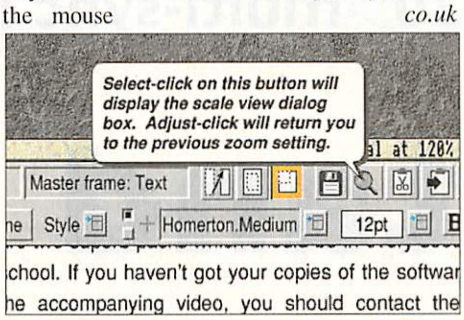
BubbleHelp is better than Acorn's version

I RECENTLY updated my copy of *ArcFax* by David Pilling which came with another application called *BubbleHelp*. This is an alternative to the RISC OS 3 *Help* application, only better. When it is loaded press Alt-F1 to activate *BubbleHelp* and when the mouse is left stationary, a bubble appears by the mouse pointer containing help text. It's fully configurable and works with all applications that support *Help*.

I recommend it to everyone. It's much nicer than *Help*, although at present a few odd bugs show themselves when run on a Risc PC or with a non-standard filing system like *Wizzo* by ICS.

David is planning to produce a new version soon which will be available separately.

David Pilling
PO Box 22, Thornton Cleveleys, Blackpool FY5 1LR
E-mail: david@pilling.demon.co.uk



Better help with bubbles, courtesy of David Pilling.

Modern languages

Welcome to new *Acorn User* writers Rebekah Gall and Judy Clements. Rebekah is Head of Modern Languages at Highgate Wood School, North London and Judy teaches French and German in the same department. They have both had a great deal of experience using IT in the teaching of Modern Languages and were responsible for, among other things, the French and German versions of several of 4Mation's *smArt* files.

Free software

I've always felt that something which is free is usually worth what you pay for it. Two programs from the RAF however, are free to schools but are anything but worthless free gifts.

IT in Emergencies and *IT in Logistics* are two superb packs which should be in every secondary school. If you haven't got your copies of the software, you should contact the RAF helpline. Please note these are strictly one of each pack per school.

RAF helpline
Tel: (01202) 660275

Cardz for Wordz

Colton Software has produced a set of 17 laminated cards to help teach word processing skills. Although aimed at their own word processor *Wordz*, *ClassCardz* contains a lot of material which could be adapted for other word processors.

The cards cover most word processing skills students are likely to need. The pack is accompanied by a disc and sells for £20. *ClassCardz for Resultz* will be available soon at the same price.

Colton Software
Tel: (01223) 311881
Fax: (01223) 312010
E-mail: info@colton.co.uk

Contacting me

You can contact the Education page by writing to me, Geoff Preston at *Acorn User*, Europress Publications, Europa House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: gpreston@arcade.demon.co.uk


LOOK SYSTEMS
The Monotype Font Library
URW Typeface Packs
LetraSet Typeface Packs
Medieval and Gothic Fonts (Pack One)
Medieval and Gothic Fonts (Pack Two)
Bitfolio Cartoons
Bitfolio More Cartoons
Bitfolio Christmas
Bitfolio Clip Art 6 CD
Font Directory
Archimedes Disc Rescue
Datafile Public Domain CD One
Datafile Public Domain CD Two
17" multi-sync monitor
20" multi-sync monitor
Stand 125
OR 'PHONE LOOK SYSTEMS ON 0603 748253

Portables

PocketFS 2 on release

ACORN has at last released *PocketFS 2*, an updated and vastly improved version of the A-Link transfer software.

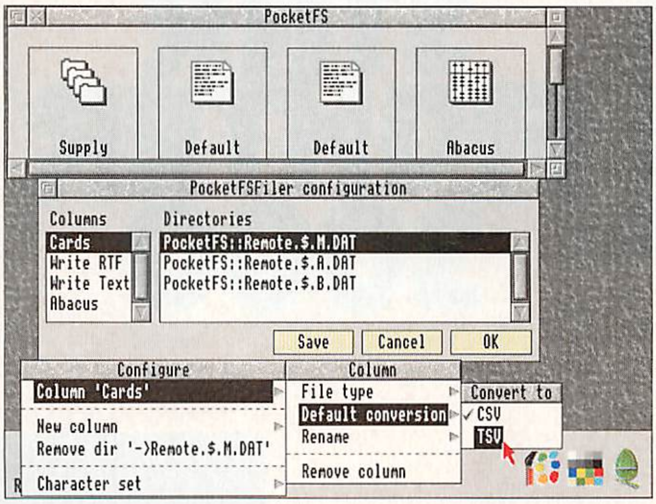
PocketFS 2 is designed to work with the Pocket Book (Mark 1), the Pocket Book II, the Psion 3 and 3a. It costs £42.12 + VAT.

PocketFS 2 offers many new features and improves upon the existing features. The new version allows multiple file conversions, new and improved configuration options, limited Pocket Book filer functions within the transfer window and improved compatibility with the Pocket Book II/Psion 3a.

The new version is much more reliable than the original and since upgrading I have encountered very few of the transfer breakdowns that were 'oh-so-very' common when using the A-Link on a pre Acorn A5000 machine.

You can now also configure more transfer columns for other filetypes or transfer configurations.

For example, you could have two columns for *Write* files – one for converting them to RTF and another for converting them to *Edit* format. This is very useful if on a regular basis you use both *Impression* – which can handle RTF files – and another DTP package such as *PipeDream* which can't cope with them.



PocketFS 2's transfer and configuration windows. Although you can now have more than one conversion column, they appear identical, as the two 'default' columns show.

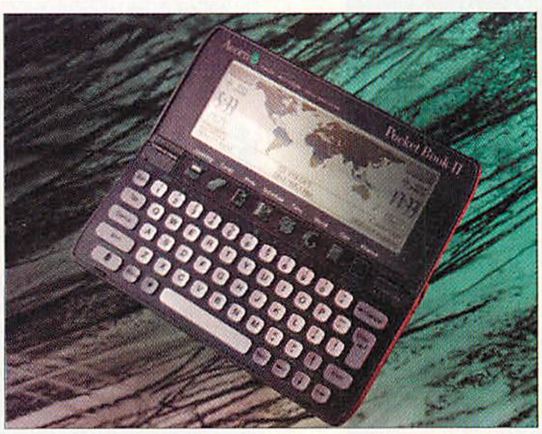
The only down side to this feature is that the columns cannot be named so you have to remember which is which; next upgrade perhaps?

Although *PocketFS 2* is no faster when it is used with the original Pocket Book or Psion 3, it does have the ability to take advantage of the Pocket Book II and Psion 3a's faster serial link which nearly doubles the speed of transfers. This is done by changing a line in the program's run file.

Overall, *PocketFS 2* is an excellent piece of file transfer software which is easy to use and works like a dream.

Acorn Computers Ltd
Tel: (01223) 254254
Fax: (01223) 254262

Then there's the Pocket Book II



Acorn's excellent Pocket Book II

THE Pocket Book II, as revealed in October's edition of *Acorn User*, has been released by Acorn as the educational equivalent of the Psion 3a. palmtop computer

Although no bigger than the original, it has a bigger and better screen, a voice microphone, more memory and much more software. In the next column I will be taking a detailed look at the new and enhanced applications that come with the Pocket Book II and also giving my impressions of the machine.

Just by looking at the specification of the machine my initial reaction is one of excitement and pleasure. It seems Acorn has listened to the Pocket Book's critics and has designed a machine that will shut them all up, while retaining the sound educational fotting of the Pocket Book I.

It contains all the Psion 3a software and enhancements as well as some Acorn software more designed for its educational role, for example *Plotter* and a dictionary/thesaurus.

All this costs only £10 more than Psion's 3a. This makes it ideal for business as well as educational establishments and with the right degree of marketing this could be one of Acorn's most successful products yet.

A portable welcome

Acorn has only recently entered the portable sector but already it has become an important and exciting market.

Recently things have really been hotting up – especially with the recent release of the Pocket Book II which opens up a whole new range of software and hardware for Pocket Book users. Users wanting an Acorn palmtop can now have a machine which rivals the acclaimed Psion 3a.

While these computers may not run RISC OS, they are every bit as much a part of the Acorn range of computers as the RISC PC, and *Acorn User* intends to treat them as such.

This new bi-monthly column is designed to keep you up to date with all the latest developments in the portable sector, as well as being a place for users to share hints and tips, ideas and advice. Occasionally in a column I will focus on a particular portable theme.

Acorn is for obvious reasons emphasising the Pocket Book's use as a link between education in schools and at home. It is ideally suited to this purpose, but it has a multitude of other uses too. Some of the themes to be covered in future columns include business, education, expansion and games. Well, even the most serious user needs a touch of light relief occasionally. Most computers in offices have a copy of *Tetris* on them somewhere.

Anyway, if you have any ideas for future themes, if you agree or disagree with any of my comments or if you have any hints and tips that you would like to share with fellow readers, please drop me a line.

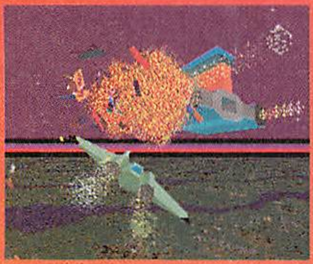
Until next time, happy portable computing.

Contacting me

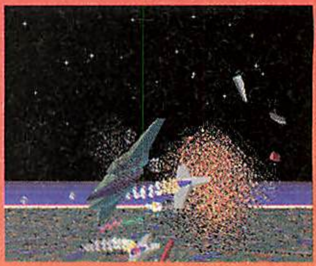
You can contact the Portables Page by writing to me, Mark Taylor at *Acorn User*, Europress Publications, Europa House, Adlington Park, Macclesfied SK10 4NP or by e-mail to: markt@acornusr.demon.co.uk

NEW

FEDNET

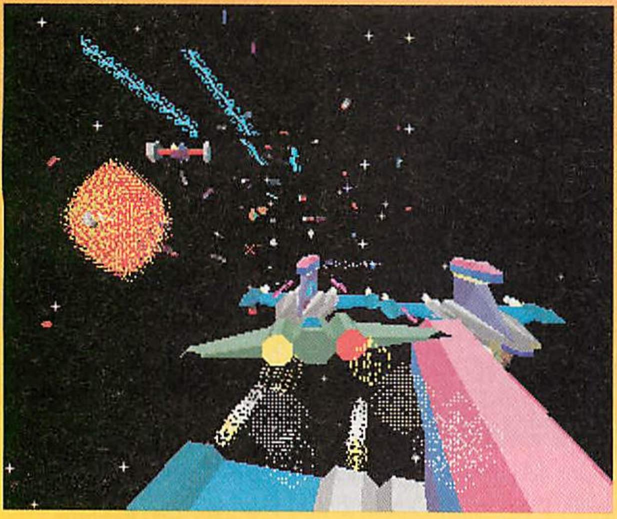


STAR FIGHTER 3000











Dealer enquiries welcome

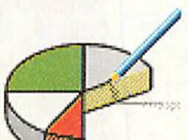
RiscOS 2.00+ Min 2Mb required. Take part in the ultimate space adventure for just 29.95 earth pounds, fully inc. To order, call FedNet on (01332) 840487.
FedNet Software - 66 Park Road, Duffield, BELPER, Derbyshire DE56 4GR.

WFE

Cover disc

HomeWorks: Graphs & charts

Author: Insight



HomeWorks: Graphs and Charts runs on RISC OS 3.1 machines or later. On pre-Risc PC machines, you will need to install the *ColourPicker* module in your copy of *!System*. This is provided with *HomeWorks* in the archive. Run the *SysMerge* program supplied and use it to update your copy of *!System* with the one supplied on the disc.

For detailed instructions about how to install *HomeWorks* on your machine, refer to the *HomeWorks* article in the magazine. *HomeWorks* may not run properly if it is run from the archive; it should be copied to another floppy or to your hard disc first.

The *Examples* directory in the archive contains three CSV files suitable for creating graphs. The *Acorn* file gives prices for some of the Acorn Archimedes range of computers; this is especially suitable for display as a pie chart. The *Election* file follows the caprice of the British electoral system over the past century, and is an obvious candidate for display as a scatter or line graph. The *OECD* file gives various economic indicators for selected countries, which can be displayed as a bar graph.

Note that before you can display *any* data, you must select a dataset for display. This is done be choosing 'Graph styles...' from the menu, obtained by clicking with the Menu button over a *HW:Graphs and charts* window. Double-click on the graph style that you want – which will open the style editor window – go to 'Dataset setup' and select at least one dataset to be used for the graph. Make sure that the style that you have edited corresponds to the style displayed in the 'Graph style' icon on the tool bar.

While we will be happy to answer any queries regarding the operation of *HomeWorks*, please send any technical queries to Insight at the address given below on the coupon.

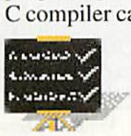
Tie-ins

Author: Various

A number of the archives on this disc tie-in with articles elsewhere in the magazine:



- The *C* archive contains the program *Kate1*, which illustrates the use of arrays in C and accompanies the C for yourself article on C programming. The source code for the program is the text file *Kate1* inside the *C* directory; the Absolute file *Kate1* is the compiled version of the program, provided so that readers without a C compiler can see the program in action.



- The *Education* archive accompanies the Modern languages feature in the magazine. The *ModLang* directory supports the Easy talk feature on using IT in language teaching, and contains French and Greman versions of a map and directions.

The directions are in a text file suitable for processing via *Linguatext* from Hampshire Microtechnology Centre as described in the article. The *smArt* archive contains a *smArt* file called *Clown*, and the directory structure which was used to create it. To use this you will need a copy of *smArt* from 4Mation.



- The *StarInfo* archive contains all the programs described in the ✱INFO section of the magazine. Among the many offerings this month are a Risc PC-style mode selector for older machines, a transistor circuit simulator, a spirograph program, the (very) odd one-liner and a *Draw* file of a farmer creating a crop circle. See the ✱INFO section for more details.

Disc problems

Our cover discs are thoroughly tested at every stage of production, but one or two faulty discs may slip through. If you suspect that you have a faulty disc, check whether it verifies by choosing 'Verify' from the menu produced from the floppy disc icon on the icon bar.

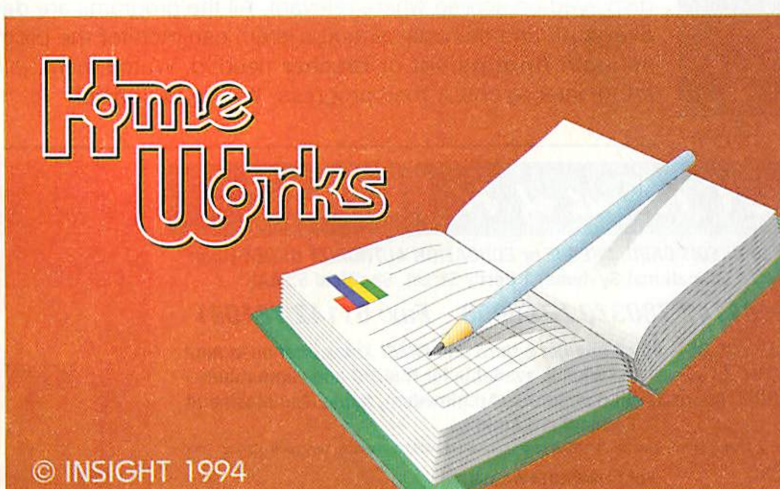
If the disc does *not* verify, then it is physically faulty and should be returned to: PC Wise, Dowlais Top Business Park, Dowlais, Merthr Tydfil, Mid Glamorgan CF48 2YY, who will replace the disc free of charge. If it does verify, contact the editorial office at the address given on the contents page.

Many of the programs on the cover disc do not work with RISC OS 2, although the menu and archiving system on the disc does. Developers are no longer required by Acorn to support RISC OS 2, and increasingly software writers are finding it hard to get access to RISC OS 2 machines to test their software.

While we try to check all the programs on the cover disc, we are unable to check them on all possible combinations of machine and peripherals. If you do uncover a problem with one of the programs on your machine, do let us know.

The *Acorn User* cover disc has been checked for viruses using *Killer* version 1.801 from Pineapple Software.

HomeWorks coupon 2



This is the second coupon in a set of five which together entitle you to a 40 per cent discount off the price of a registered version of *HomeWorks*. Normally, a registered version would cost £50, so with all five tokens it will cost you just £30.

To claim your registered version of *HomeWorks*, send all five tokens (once you have collected them), plus a cheque for £30 made out to Insight, to Insight, 23 College Place, St Albans, Hertfordshire AL3 4PU.

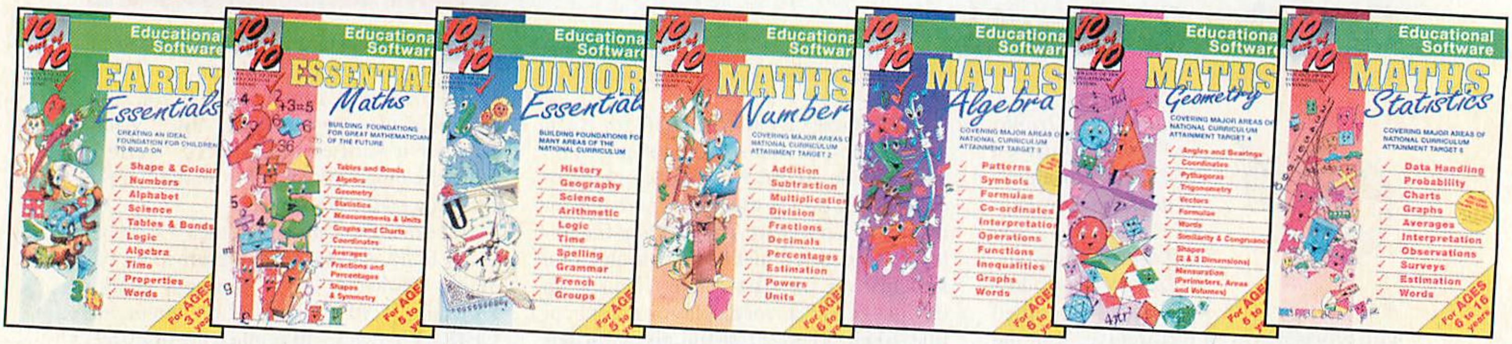
... 32-bit Acorn home computers ... Commodore Amiga ... Apple Macintosh ... IBM PC/compatibles ...

The 10 out of 10 Series

VOTED **BEST** EDUCATIONAL SOFTWARE OF 1994 - Acorn User (Aug. '94) reader survey

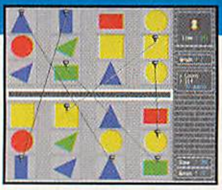
CD VERSIONS PC AVAILABLE

Everyone can learn something from these acclaimed suites of software:





The INNOVATIVE 10 out of 10 Series

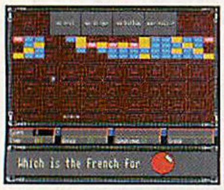

Great fun as you play and learn


Progress is automatically recorded

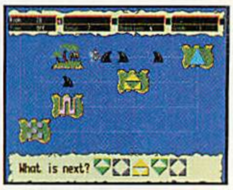
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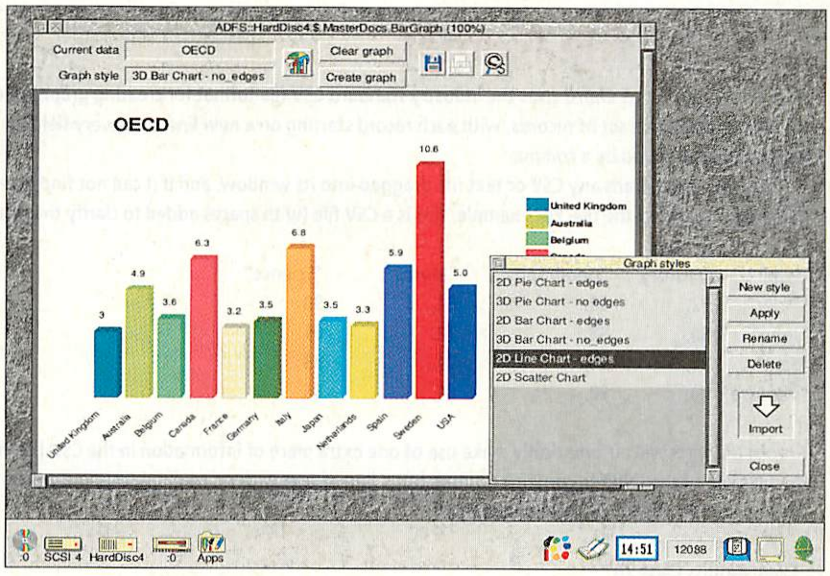
...it's the way that you do it. James Harrison describes part two of the HomeWorks suite: the Graphs & Charts module for generating all the graphs you need.

HomeWorks Graphs & Charts is the second part of the *HomeWorks* integrated suite of applications. It allows you to create, with great ease, professional looking graphs that will grace any report or presentation. There are four types of graph that *Graphs & Charts* sports: Pie, Bar, Line and Scatter charts.

Most of the graph types can be generated in either 2D or 3D, with the depth of the chart and its viewing angle totally customisable. The graphs can also be in either outline, filled-no-edges or filled edges mode.

Segments can be withdrawn from Pie charts and several innovative label and legend positioning options not previously seen on an Acorn computer, such as rotated text for line chart labels, are also available.

Graph Styles are used for replicating graph information, giving extremely flexible power over how the imported data is converted into graphs and charts.



Graph styles

HomeWorks Graphs & Charts is based around styles. In the same way that a word processor allows you to define Text Styles containing information such as the font name, size, colour, and so on, so *Graphs & Charts* allows you to create Graph Styles.

A Graph Style contains every piece of information about the appearance of the graph, ranging from the graph type – pie, bar, line or scatter – and the colours used for each part of the graph, to whether or not the graph will have a key, a title, and so on. A Graph Style can be given a name and applied to any suitable data – in this case CSV (Comma Separated Value) data. Should you decide to change any aspect of the graph, such as the colour of a single value or the font used for the labels, you simply need to edit the relevant style. A Graph Style, or a set of styles, can also be saved in a Template file, reloaded at any time, and applied to any other CSV data.

In use

Once you have installed *Graphs & Charts* (installation instructions follow at the end of this article) you should double-click on the *HomeWorks* icon in your Filer window to install the *HomeWorks Manager* on the icon bar. Now

Font messages files

Several people have written in asking how RISC OS 3 Font Messages are created. A Font Messages file allows a font's correct name, as opposed to the Acorn name, to be displayed in font menus and dialogue boxes, for example Helvetica.Bold instead of Homerton.Bold. The following is an example of the contents of a Font Messages file:

```
Font_AvantG.Book:CC AvantGarde.Book
Font_AvantG.Demi.Oblique:CC AvantGarde.Demi.Oblique
Font_AvantG.Thin.Italic:CC AvantGarde.Thin.Italic
Font_Clauch:EFF Hobo Font_Dingbats:ZapfDingbats
```

In a Font Messages file, the Acorn name for the font appears on the left-hand side – AvantG.Book, Clauch and so on – preceded by the letters 'Font_', and succeeded by a colon. Immediately following the colon is the alternative name for the font. This name can be anything you want, from the font's true PostScript name to your girlfriend's pet hamster's name.

To create your own Messages file, open your fonts directory and create a text file substituting the above example names with your own font details and alternative names. When you have entered all the details correctly, save the new text file as *Messages1* inside the fonts directory. Whenever you now use a program that supports Messages files, your alternative names will appear in the font menus.

The CSV file format

HomeWorks Graphs & Charts uses the industry standard CSV file format for creating graphs. A CSV file simply contains a set of records, with each record starting on a new line, and every field in each record seperated by a comma.

Graphs & Charts scans any CSV or text file dragged into its window, and if it can not find acceptable data, will reject the file. For example, this is a CSV file (with spaces added to clarify the setup):

```
"Pupil",   "History", "Geography",  "Maths",   "Science"
"Peter",   72,        60,           84,        90
"John",    80,        88,           70,        66
"Sam",     65,        55,           77,        83
"Vanessa", 90,        98,           80,        86
```

Graphs & Charts will automatically make use of one extra piece of information in the CSV file. If the first line of the CSV file contains nothing but a line of text with no commas, this line will be used as the title for the graph. For example:

```
"Exam Results Class 3A"
"Pupil",   "History", "Geography",  "Maths",   "Science"
"Peter",   72,        60,           84,        90
"John",    80,        88,           70,        66
"Sam",     65,        55,           77,        83
"Vanessa", 90,        98,           80,        86
```

If it is not present, then the file name of the CSV file will be used as the title.

click with Adjust on the *HomeWorks* icon to open the *HomeWorks* Filer window.

You should find in this window the *Graphs & Charts* icon, the *Document Designer* icon (assuming you have October's module) and the Help and Work icons. Run *Help* now as it will provide you with invaluable information about using the program. Double-click on the *Graphs & Charts* icon to open its Templates directory, and then run any of the example Templates that appear in this window.

An 'untitled' window will appear on screen and you can now drag one of the CSV files from the *Examples* directory into this window.



To create a graph from this data immediately, simply click on the Create Graph icon on the button bar. To use a different graph style, click with Select over the section of the button bar showing the current graph style, and a menu of Graph Styles will appear. Select a style, click on Create Graph, and hey presto – a totally new graph is created.



To create a new style or edit an existing one, either choose the Graph Styles option in the *Graphs & Charts* menu or click on the Graph Style icon on the button bar. The Style Manager window will open in the middle of the screen.

A new graph style can be added either by clicking on the New Style button or pressing 'N'. A new style called 'Untitled' will appear at the bottom of the Style list.

You can change the style's name by clicking on the Rename button or pressing 'R'. Enter a new name and press Return.

To edit the new style, either double-click on the style name or press Return again. When you have finished editing the style definition, press Return or click on the OK button to close the Style Editor. You can now apply the style to the currently loaded data by pressing 'A' or clicking on the Apply button.

Pie charts

Because the various graphs are created in such similar ways, to save space in the magazine we're only going to talk about pie charts here: if you can get the hang of pie charts, the interactive help will enable you to produce the other three types of graph easily.

Pie charts are very useful for presenting values as a percentage of a whole. For example, a pie chart will clearly convey to an audience of shareholders which of a company's five products contributes most to its annual profits and their dividends.

A pie chart is only really suitable for displaying up to six pieces of information – anything more than this and it can become cluttered and unintelligible. *HomeWorks Graphs & Charts* allows pie charts to be displayed in a number of ways:

- An outline of the graph can be created, or the graph can be filled with or without an edge.
- You can specify the angle at which the first segment of the graph starts (from 0° to 360°).
- You can specify whether or not the chart is 3D, and if so you can specify the viewing angle for the chart. You will notice when you use *Graphs & Charts* for the first time that there is no '3D' button as such. *Graphs & Charts* allows you to customise the depth of a chart, so a pie chart with a depth of 0 is a 2D chart, while any depth value greater than 0 will turn it into a 3D chart.

Regardless of the depth of a pie chart, you can specify the viewing angle of the chart. This is the tilt of the graph and can be any value between 1° and 90°. A value of 90° means that you will be looking at the graph directly from above – i.e. no 3D effect at all. A viewing angle of 1° means that you will be looking at the graph side on – not recommended either.

Suitable and recommended values for 3D graphs are 3cm for the chart depth and a viewing angle of between 30° and 60°. Appropriate 2D values are 0cm for the depth and a viewing angle from 30° to 90°.

If you are using more than one dataset for creating pie charts, *Graphs & Charts* allows you to specify whether individual charts are created for each dataset (and whether the individual pie charts are proportionally sized) or whether a single chart is created from all the data, with the corresponding values in each dataset either summed or averaged.

Registration

The *HomeWorks* applications are neither public domain nor shareware. Early next year various parts of each application may form the core of a considerably more advanced integrated package. We would like this application to be designed around comments and suggestions made by you the user, and you are welcome to write to us and tell us what features you would like to see in a possible release version.

If this version is released, *Acorn User* readers will be entitled to a 40 per cent discount off the expected retail price of £50. Save the voucher that accompanies each *HomeWorks* module in *Acorn User* (there are five vouchers in total) to claim this discount if the *HomeWorks* project finally reaches fruition. Our address is: Insight, 23 College Place, St Albans, Herts AL3 4PU.

You can also choose whether or not a key is created for the graph(s), and whether each segment has a short 'pointer' to its label.

Saving

To save a *HomeWorks Graph* file, either click with Select on the Save icon on the button bar, choose the Save option in the File menu, or press F3. A save box will appear, and once you have entered the correct name, you can drag the icon to a Filer window or click on the OK button if a pathname is present.

To save a graph as a *Draw* file, click with Adjust on the Save icon on the button bar, enter a name in the save box, and drag the icon into a Filer or application window.

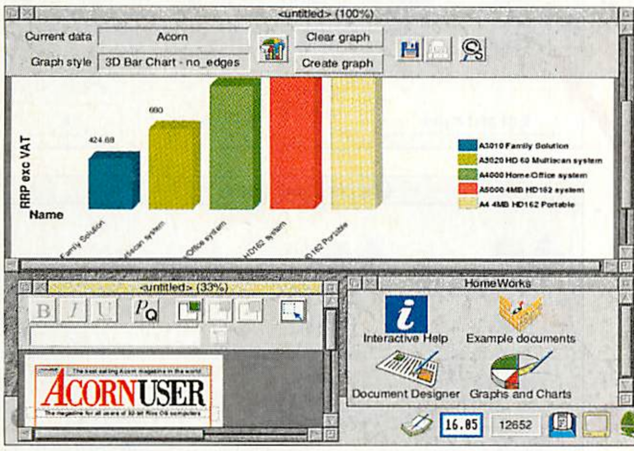
As with the *Document Designer*, a simpler method for saving a graph is to press Shift and start to drag with Select or Adjust. A *Draw* icon will appear, and you can drag this into a Filer window or directly into your graphic package.

Revert to Saved is a useful option if you wish to experiment with the design of a graph. Simply save the graph as a *HomeWorks Graph* file before making any major alterations, and should you at any stage decide that you don't like what you see, choose Revert to Saved. The loaded version will be discarded (pending confirmation) and the last saved version will be reloaded.

Dialogue boxes

On the next page is a diagram showing how the various dialogue boxes in *HomeWorks* ling to the style editor box. There are four different graphs style editor dialogue boxes, depending upon which type of graph – pie chart, bar graph, line graph or scattergram – you are editing.

Next month we'll be presenting the *HomeWorks Spreadsheet*, which will be able to generate CSV files for importing straight into *Graphs & Charts*. And keep your eyes peeled for more *HomeWorks* modules coming from the Insight programming team over the coming months...



The *Document Designer* integrates seamlessly with *Graphs & Charts*

Installing if this is your first HomeWorks application

Floppy disc users

1. Format two discs in either 800K (E) format or 1.6Mb format and create a RAM disc of about 500K.
2. Double-click on the *HomeWorks* icon on the cover disc to open the Filer window containing the actual *HomeWorks* application. Copy this onto the RAM disc to uncompress *HomeWorks*.
3. Copy the *HomeWorks* application from the RAM disc onto one disc.
4. To create the system disc, copy *!System*, *!Scrap*, *!Fonts* and *ChangeFSI* off the RISC OS 3.1 application discs onto the second formatted disc. Merge the copy of *!System* supplied with *HomeWorks* with *!System* on the second disc.
5. Whenever you now want to use *HomeWorks*, open the system disc Filer window before running *HomeWorks*.

Hard disc users

1. Double-click on the *HomeWorks* icon on the cover disc and copy the actual *HomeWorks* application onto your hard disc.
2. Merge the *!System* supplied with *!System* on your hard disc.
3. Open the directory on your hard disc that contains *!System*, *!Scrap*, *!Fonts* and *ChangeFSI* before running *HomeWorks*.

Installing if you have another HomeWorks application

In order to allow *Graphs & Charts* to run directly from the cover disc, subject to it having been uncompressed first, it has been supplied with its own copy of the *HomeWorks* Manager – identical to the Manager supplied with the document designer.

If you are running *HomeWorks* from a hard disc, simply open the archive by double-clicking on the *HomeWorks* icon and then drag the *HomeWorks* application out of the archive onto your hard disc version.

Graphs & Charts will then be installed alongside the *Document Designer*, and whenever you now run *HomeWorks*, the *Graphs & Charts* icon will appear in the *HomeWorks* Filer window.

If you are using the *HomeWorks Document Designer* from an 800K floppy disc you will probably find it easier to use *HomeWorks Graphs & Charts* from a second disc, and you should follow the floppy disc users' instructions for first time users.

The only unfortunate side-effect of this is that you will have to quit the *HomeWorks* Manager and reload the other version when switching between *HomeWorks* applications.

1.6Mb floppy disc users can install *Graphs & Charts* in the same Manager as the *Document Designer*. Simply follow the hard disc users instructions above.

How the *HomeWorks* dialogue boxes link to the graph style editor box.



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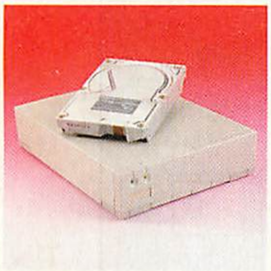
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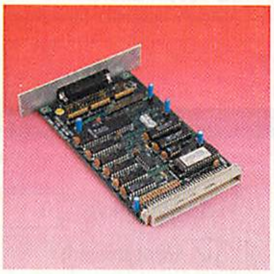
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Professi

How to describe *Publisher Plus*? It's too frivolous to describe it as *Publisher* with some extra twiddles, and yet the cosmetic differences are slight. The package has some nice extra touches.

For instance, it now offers vastly improved word counting features. No more fishing about in the info box, *Plus* will now tell you how many words there are in the document, chapter, story or selection at the touch of a hot-key.

If you've selected an area of text, the toggle case hot key will lead you into a brief dialog offering capitalise initial letters, starts of sentences, all upper or all lower.

The print setup dialog has had an extra page origin feature added. This lets you move the printed image relative to the page so if you have a habit of losing crop marks off one edge of your proofs, you can compensate and with some trial and error get half a set of crop marks at each edge.

Apart from the new, attractive, blue logo, that's about all that is immediately apparent, which considering the £130 upgrade price from *Publisher* seems not to be much for your money. So what is all the fuss about?

New colour options

Publisher is an accomplished program offering a substantial improvement on both *Style* and *Impression II* which were both very capable packages. However, *Publisher* is pitched at a more professional user and – given this fact – has some noticeable omissions, including OPI support and spot and named colours.

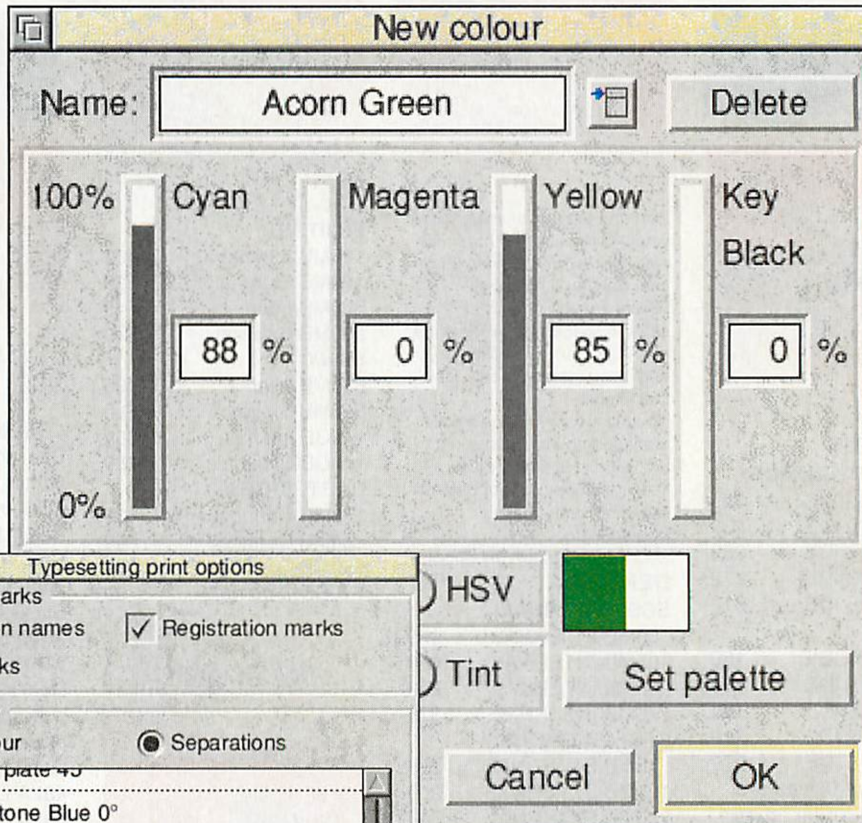
These problems are irrelevant for most users, and the inability to define spot colours can largely be worked round with some judicious juggling of the CMYK plates. Although the overprinting and knock-out features are both easy to use and powerful, the four plate limit is bound to present problems eventually.

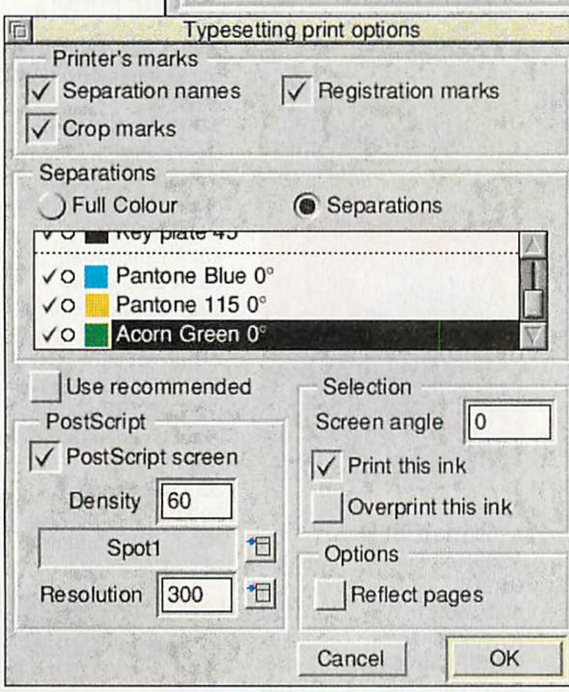
When *Publisher* was released, a supplement was promised to answer these criticisms; it has now arrived in the form of *Publisher Plus*. *Plus* solves all these problems and does it quickly, cleanly and almost transparently.

A new option on the Edit menu lets you edit colours. You can define named colours in RGB, CMYK or HSV colour models and switch between them freely. You can define a new colour as a spot colour, a process (CMYK) colour or as a tint based on another colour.

A tint can be anything from 0 per cent to 100 per cent of its base colour, and if you change the base colour the tint updates automatically. The spot colours are the same. Define a screen approximation and when you next look at the typesetting dialog you'll find your spot colour plate added to the CMYK plates that you started with.

You can have the plate names printed alongside the registration and crop marks, so setting your colours to Pantone numbers produces correctly named spot colour plates. The PostScript options will allow you to set screen angles for each plate independently, process and spot alike. You have a choice of most of the standard resolutions from 300dpi to 2540dpi and ten different spot shapes which should cover most eventualities.





Create a new colour and a plate will automatically appear in the typesetting dialog.

This isn't the end of the colour story however. If you import *ArtWorks* files you can use the colours that you've already defined in the *ArtWorks* document inside your *Plus* document – colours with the same name and specification are mapped onto each other without any effort.

There's no pre-defined Pantone library bundled with *Plus*. This is no great loss as apart from saving yourself an expensive license fee, you can name your separations after any Pantone numbers you're using and set it to a passable screen approximation of the colour itself.

OPI support

The last difference between *Publisher* and *Publisher Plus* – though by no means the least – is that *Plus* supports the Open Prepress Interface. OPI allows you to incorporate very high resolution images into your document without actually having to move lots of several megabyte images about yourself. This works by send-

onal publishing

Computer Concepts has just produced an augmented version of its Publisher DTP software; Steve Powell takes a look.

ing the images you want to use – be they slides, transparenices or photos – to a reproduction bureau. They scan them in using very high resolution drum scanners and produce a large high-res image and a smaller more manageable low-res image. They send you the low-res image for you to use in your document.

When you send your document back to them the low-res image is replaced by the high-res image. The theory goes that you don't need a bottomless hard drive and your documents are a much more manageable size.

In practice, the image they send you is usually pretty large anyway and you have to send the bureau a PostScript output file for them to merge using an OPI post-processor, which will more than likely run to several megabytes. Most bureaux can provide you with the low-res image as either a TIFF or as a Mac PICT, both of which import seamlessly into a *Plus* frame.

I have to admit I had some trouble porting some TIFFs and EPS/DCS files in from the Mac, but once I'd twiddled with the settings a bit and ported them over using DOS discs they dropped into documents like they had been born to it. Combine this with a Mac disc reader and your Arc can steal data from PCs and Macs, which despite far greater numbers still have problems talking to each other.

Conclusion

Publisher is a very capable competitor. If you weigh up the missing features and the price difference honestly, you'd rate it a good performer equal to many more expensive packages and far better than anything in the same price bracket.

Publisher Plus has raised the stakes considerably. It offers *Quark*-like facilities at a substantially lower price. The only hurdle it faces is the entrenched view that all that is Apple is good and all that is PC is better.

Having said that, there are a few things lacking. Fit to frame *still* doesn't – you drop a screenshot into a bordered frame, bring up the 'Alter graphic' dialogue box, click on the 'Fit to frame' button and see your screenshot scaled to *just smaller than* the frame, leaving an artistic white border. Shift-dragging to select multiple frames is another useful feature which *Plus* doesn't have, nor is there a proper Undo option.

In all other respects, *Publisher Plus* is an excellent DTP package. The facilities that it offers over and above *Publisher* will in the main interest professional publishers, and it is good to see software for the Archimedes aimed unashamedly at this market. AU

Home OPI

Rumour has it that a home OPI-type system may be implemented in future versions of *Impression*. This cut down version would require pictures to be stored in two formats on your hard drive. A large high-resolution version and a smaller low-result sprite would be linked together. When using your DTP software the screen display would use the low resolution version; this would be replaced by the high resolution version when you printed the document out.

Why do it? Well apart from reducing the load on the processor (moving several megabyte images about is no easy task even for an ARM) it would let you produce very high quality documents without investing in vast quantities of RAM. It also does away with the need for a virtual memory system which requires constant disk access and results in longer screen updates as data is pushed to and pulled from the swap file which is held on your hard drive.

EPS, DCS and OPI

Encapsulated PostScript is one standard way of exchanging illustration and pages between different bits of software, and is reasonably well implemented on the Arc. Try porting a Mac EPS into *CorelDraw 4* and you can wave goodbye to any colour information that was in it.

Desktop Colour Separation is a variation on a theme. Essentially it's an EPS file that has pre-separated CMYK data held in five separate but associated files. There is a preview file and four separate files; one for each of the process colours. They usually have .C, .M, .Y and .K suffixes. This method of holding data is well known on the Mac which also has facilities for producing CMYK pre-separated TIFFs with a similar five - file format.

Lots of dots

PostScript lets you define the shape of the dots that are used when an image is half-toned. Printing presses can't produce greys; & after all, a bit of paper either has black ink on it or it doesn't, in which case it's white. In order to produce a range of greys the typesetter puts lots of little dots instead of solid areas. The more dots of black the darker the grey.

The same method is applied to all four process plates (Cyan, Magenta, Yellow and Key) to produce ranges of each colour and by mixing them produce the impression of the complete colour spectrum. The dots are usually all the same shape, if not the same size.

The reason PostScript allows you to change the shape of the dots is so that you can interlace them better when producing separations. Each colour is rotated so that it doesn't completely overlap the other colours. With different combinations of colours and angles, different dot shapes produce better results. Elliptical dots also produce less banding when printing graduated colours.

Product details

Product: Publisher Plus
Supplier: Computer Concepts
Tel: (01442) 63933
Fax: (01442) 231632
E-mail: info@cconepts.co.uk
Price: £299 + VAT
£130 + VAT to upgrade from *Publisher*

Pros: OPI implementation • Spot and named colours • Imports EPS files

Cons: Improvements over *Publisher* mostly aimed at professional DTP work • No undo

Software & Hardware for

SOFTWARE

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STYLE REVIEW:

"Impression Style represents ridiculous value for money..."

ACORN USER

IMPRESSION PUBLISHER



The latest and greatest addition to the DTP/WP range. Everything in Style, plus advanced features such as irregular shaped graphics frames, crop marks, page bleed, auto tracking and kerning, full colour support including Postscript separation of 24 bpp and 32bit CMYK images. 2Mb RAM min. required.

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PUBLISHER REVIEW:

"Nothing else comes near it on the Acorn machine..."

ACORN COMPUTING

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The fastest printer drivers available for Acorn computers - up to five times faster than even the most recent Acorn printer drivers. Suitable for all current mono and colour Canon and Hewlett Packard inkjet printers (and laser printers) and Epson Stylus. Includes printer cable. 4Mb rec. for colour. Please state which printer you use.

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TURBO REVIEW:

"The results are stunning..."

ACORN COMPUTING

ArtWorks



The fastest, easiest to use and most powerful graphics illustration program for the Archimedes. Package includes 220 outline fonts. 2Mb RAM minimum recommended. CD-ROM version available (same price) includes contents of the ClipArt CD and all fonts in both RISC OS 2 and 3 format.

£169 + VAT (£198.57 inc)

ARTWORKS REVIEWS:

"It's the best art program ever to hit the Archimedes!.."

"ArtWorks is a great package, full stop."

ARCHIMEDES WORLD

"In short it is amazing..."

ARCHIVE

CLIP-ART CD



CD with over 700 ArtWorks drawings, over 100 24-bit full colour photographs, and a demo version of AudioWorks and sounds.

£19 + VAT (£22.32 inc)

CLIP-ART REVIEW:

"A top notch product that represents true value for money.."

ARCHIIMEDES WORLD

AudioWorks

A general purpose audio sample editing application. Works with a variety of different file formats and can play back through the Archimedes sound system.

£49 + VAT (£57.57 incl.)

AUDIOWORKS REVIEW:

"Taking over as the industry standard for Archimedes sound sampling packages.."

ACORN USER

MacFS

A MAC DISC READ & WRITE UTILITY FOR ACORN RISC COMPUTERS

A utility to read and write to Apple Mac SuperDrive floppies and via a SCSI interface, hard discs, Syquests and optical drives. RISC OS 3.1 required.

£99 + VAT (£116.32 inc)

Graphics Loaders

If you need some good 24 bit colour images, this software will allow you to load JPEG compressed files, PhotoCD images, TIFF and Clear files into Impression Style, Publisher and ArtWorks 1.5. Includes sample JPEG images. *£39.00 + VAT (£45.82 inc)*

Compression

Very fast automatic general purpose file compressing and decompressing utility. Acts like a filing system but can provide up to twice the storage on your floppy or hard discs. Compatible with all applications.

£29 + VAT (£34.07 inc)

the Acorn RISC computers

ColourCard GOLD

Graphics accelerator expansion card. Provides much higher resolution, more colours, less flicker (higher refresh rates) and faster graphics drawing. 32,000 colour screen modes and video pass-through for Acorn modes. If your RISC OS desktop is becoming cluttered, how about upgrading to a screen size of 1600 pixels across. Compatible with A300, 400, 540 and A5000 computers.

£249 + £6 p&p + VAT (£299.62 inc).

GOLD REVIEW:

"I don't know how I ever survived all those hours squinting and scrolling..."

ACORN USER

ScanLight 256

The very popular hand-held scanner capable of scanning 256 grey-levels for photographic quality image capture. The best way to get pictures into your computer. Includes internal expansion card. Versions available for all Acorn computers - so please specify model of computer when ordering.

A300/400/5000: £159 + VAT (£186.82 inc)
A30X0/4000:
CC mini podule £169 + VAT (£198.57 inc)
HCCS Ultimate MicroPodule £229.00 + VAT (£269.07 inc)

SCANLIGHT 256 REVIEW:

"Really impressive. A stable, well made product."

ARCHIVE

ScanLight Video



A combination of ScanLight 256 greyscale hand scanner, and real-time 256 greyscale video digitising, on a single card.

£220 + VAT (£258.50 inc)

SCANLIGHT VIDEO REVIEW:

"Excellent quality..."

ARCHIMEDES WORLD

ScanLight Professional

High quality flatbed A4 256 grey-level scanner and ScanLight image processing software. Requires SCSI interface card (available as optional extra).

£499 + £10 p&p + VAT (£598.07 inc)

PROFESSIONAL REVIEW:

"This really is a professional level tool."

ACORN USER

ScanLight Professional Colour



New high quality 24-bit full colour flatbed A4 scanner. Special bundle includes the stunning Spacetech Photodesk retouching program, worth £198. 4Mbyte min. 8Mbytes or more recommended. Requires SCSI interface card (available as optional extra).

£749 + £10 p&p + VAT (£891.82 inc)

LaserDirect HiRes

Direct drive, higher resolution laser printing for Acorn Risc computers. Quite simply the fastest laser printing solution available. The HiRes8 offers a maximum of 8 pages per minute. The HiRes4, 4 pages per minute. 2Mb RAM minimum, 4Mb RAM recommended.

HiRes8 £1099 + £10 p&p + VAT (£1303.07 inc)
HiRes4 £799 + £10 p&p + VAT (£950.57 inc)

Canon Colour Printers



360dpi printing (40% higher than HP printers), vivid colour and unlike some colour printers, absolutely no problem mixing black and colours together. Separately replaceable colour ink cartridges. Includes RISC OS 3 TurboDrivers and cable.

BJC-600 A4 printer: £389 + £10 p&p + VAT (£468.82 inc). BJC-800 A4 printer: £1499 + £10 p&p + VAT (£1773.07 inc)

BJC-600 REVIEW:

"A very impressive package, worthy of our Best Buy rating."

ARCHIMEDES WORLD

Canon Mono Printers

Fast, 360 dpi, inkjet printer. Includes TurboDriver software to provide the fastest inkjet printing of any printer in its class. Printer has built-in sheet feeder and power-supply. Includes printer cable.

BJ-200 A4 printer £229.00 + £10 p&p + VAT (£280.82 inc)
BJ-230 A3 printer £289.00 + £10 p&p + VAT (£351.32 inc)

BJ-200 REVIEW:

"All in all, this is a splendid piece of kit."

ARCHIMEDES WORLD

Pioneer fast multi-disc CD drives



Holds 6 CDs and includes automatic disc changer. PhotoCD compatible. Includes driver software for all Acorn compatible SCSI interface cards, compatible with AUN networks. Two versions available, the 604X is four times normal speed (600K sec) and the 602X is twice normal speed (300K sec). CDFS 2.2 required.

604X - £999 + £10 p&p + VAT (£1185.57 inc)
602X - £499 + £10 p&p + VAT (£598.07 inc)

EAGLE M2

The ultimate multimedia product. Full video capability - digitises still images and Replay movies, audio sampling and playback, midi capability and much more. 4Mbyte RAM, hard disc and ARM3 min recommended.

Including the Eidos real-time video compression software: £329 + £6 p&p + VAT (£393.62 inc)

EAGLE REVIEW:

"In short Eagle comes highly recommended."

ARCHIMEDES WORLD

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E&OE. Prices and descriptions are subject to change without prior notice.

REVIEW

A card with 560

Macs have had digital signal processors fitted for some time. Here, Nick Craig-Wood looks at the Burden Neuroscience DSP card which provides the same capabilities for Acorns.

The Burden Neuroscience DSP (Digital Signal Processor) card is not a plug and play product. The first thing you'll need to do is read the manuals and then make up a lead for the board to get signals in and out of it before you can do anything. However, you do get a very powerful signal processor with a lot of potential for the price.

If you are into serious data logging or processing on the Archimedes then this card should interest you. Sampling data which needs processing or transforming is an ideal application. The system would also make a useful 56001 development test bed, and the DSP card could also be useful as a signal or graphics co-processor.

The 56001 has been used in workstations and larger Macs for processing digital sound and is often seen on MPEG boards for sound decoding. Because the 56001 has a mask programmable little brother, the 56000, it is finding itself in a lot of embedded applications in hi-fis and other consumer goods.

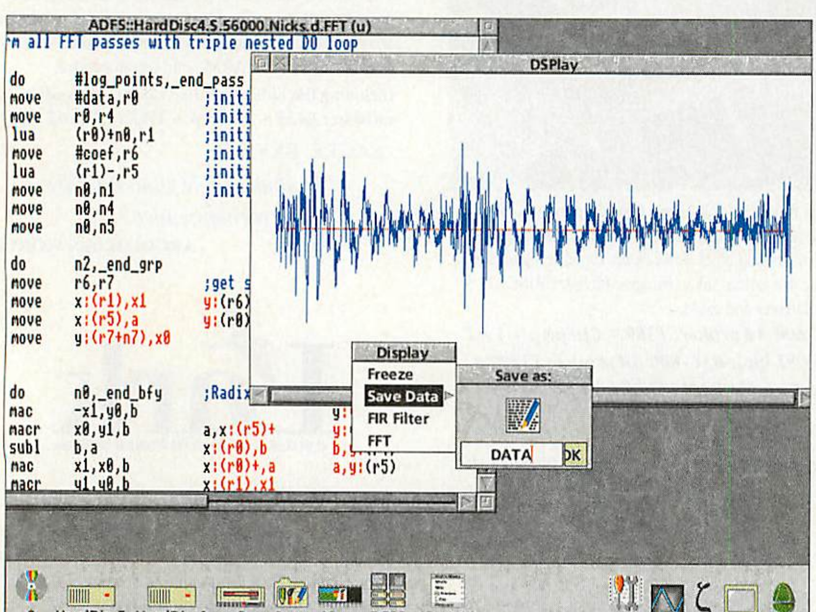
The hardware

The hardware consists of a Motorola DSP 56001 clocked at 32Mhz with 192K of zero wait state RAM (divided into P:X:Y 32:16:16 kWords, see later for an explanation!). It has two 16-bit analogue to digital converters (ADCs) which can sample to 100 kHz (16-bit, 400kHz at 12-bit) and two 16-bit digital to analogue converters (DACs) which can output to 390kHz.

The card allows the Archimedes to have full access to the RAM of the DSP and its peripherals (such as the DACs and ADCs). The DSP can also be started with a program downloaded from the Arc for software development or from an onboard EPROM for production systems. Conceivably the card could be made to run in an Arc with an external power supply.

The card comes as a single-width podule with a 25-way D-type connector for the outside world. Here you have to connect the DACs, ADCs and there is provision for a serial port, which can be used for multiprocessor work. There are also a few bits of undedicated output for switching external converters or some other external hardware.

The hardware is not Acorn compliant – so won't appear on *Podules – for historical reasons. This does have a down side in that you have to configure the software to tell it which slot the DSP card is in, rather than the software being able to search for it.



A sample being played, along with the 56001 assembler to play it. Note that some assembler instructions perform three operations on the three memory areas.

The software

The software comes on three compressed discs. You get a 56001 assembler, some demonstration and test programs, a program to make ROM images and a set of example programs for the 56001 which Motorola has released into the public domain.

The assembler requires the Desktop Development Environment (DDE) from Acorn to run, and in fact you'll probably need both Desktop C and Assembler to get the most out of the card. However, you could run the assembler with command line arguments without the DDE.

The assembler was designed to do the job of the official Motorola assembler, and as such it is mostly successful. It assembles 56001 code quickly, but is low on features such as macros or throwbacks and can also give rather unhelpful error messages. It would probably be possible to program *Cross32* to simulate a 56001 assembler but there wasn't time to try for this review.

The test software supplied (*DSPlay*) acts as an adequate test platform for code that has been developed using the assembler. It allows you to read the RAM of the DSP and examine the hardware registers. It even allows you to plot a range of DSP memory as a graph on the desktop for showing signals in real time. It comes with some test code for sampling and real time filtering.

Full source code is supplied for *DSPlay* so it is possible to write your own front-end to the DSP using these. However, using the supplied code to produce your own application is not easy, and

01 uses?

DSPlay may need to be recompiled if you don't put your DSP card into slot 0 in the computer.

Documentation

The system is supplied with a ring-bound 43-page A5 manual. This covers the bare essentials of the software and hardware and no more, from using the supplied assembler to interfacing with the hardware and a summary of 56001 opcodes. The manual also includes a very brief tutorial.

The system is also supplied with Motorola's own 56001 user's manual. It contains full details of the instructions set, the on-chip hardware and how to program it. It also includes details which probably won't be of interest to a programmer.

I could have done with more documentation, especially on the hardware interfacing details. A circuit diagram would have also been useful.

The DSP 56001

The 56001 is a 24-bit Harvard architecture digital signal processor. What this means is that unlike the ARM it has two separate areas for data (the X and Y memories) and the program memory (P). These are completely separate, so you can't run code in the X memory, for example.

All external memory is 24-bit wide as are the program op-codes and registers. It is possible to combine two registers for double precision work with 48-bits and there are also some 56-bit registers.

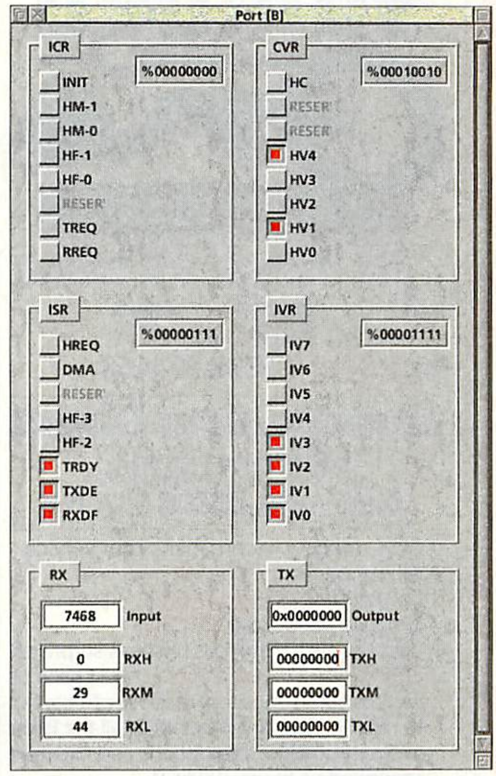
The 56001 supplied has 512 words (24-bits) of on-board RAM, 256 words of X and 256 words of Y memory and a 256 word sine look-up table, useful for FFTs (spectrum analysis).

The chip has a comprehensive set of on-board peripherals such as counter timers, a host port for communicating with the Archimedes, serial and parallel ports and the ability to network with other 56001 processors.

The Harvard architecture of the DSP means that it can access program P, X and Y memory all in one instruction, effectively doing more than one thing at once. In fact most of the DSP instructions allow additions called parallel moves which enable data to be transferred for free while the main instruction is being executed.

The DSP also has hardware looping instructions and many signal processing specific instructions. Given that it has a single cycle multiply accumulate instruction this makes it able to complete a 1024 point FFT in just over 2ms whereas it takes the Risc PC about 15ms.

All this specialisation doesn't make the DSP an easy chip to program though, especially not efficiently. The most obvious example of this is



Using *DSPlay* to adjust the setup on port B of the DSP board.

the parallel move, whereby in any one instruction it is possible to add in two extra moves for free with various restrictions. For example:

```
ADD X0,A A,X 1,A,Y:(R1)+
```

adds X0 into A, moves A into X1 and stores A in Y memory at the position specified by R1, incrementing R1 afterwards.

The DSP (like the ARM) is a pipelined chip. This means that it is executing parts of more than one instruction at once. However, this pipelining (unlike the ARM) is visible to the programmer and great care has to be taken not to use certain instructions or registers after other instructions. This is where the assembler could be more helpful and warn you of those conditions.

Conclusion

If you have a need for high speed analogue data acquisition or output from an Archimedes or Risc PC, with the ability for real time signal processing, then the DSP card is for you.

However, programming the DSP card is not easy and you will be required to learn 56001 assembler coding and deal with the 56001 hardware. For what it is, this is a good value product. AU

Burden Neuroscience

The Burden Institute is a non-profit making independent neurological research institute. It specialises in researching, developing and providing cost-effective diagnostic, surgical and neurophysical services for the NHS. It also runs various teaching courses at Bristol University.

The DSP card was initially developed as an in-house hardware solution to specific problems by Burden Neuroscience (such as ECG monitoring and looking for tumours in the brain). It was realised that the card might be useful to others, so was put on the market.

Burden uses a lot of Archimedes in its clinical work and research. Examples of this include programs for patient rehabilitation after head injury. This is a suite of programs designed to stimulate and monitor the patients simultaneously. The programs are downloaded to a computer in the patient's vicinity, and after it has run the results are uploaded back to the main machine.

Product details

Product: Burden Neuroscience 56001 DSP Card
Supplier: The Serial Port
Tel: (01749) 670058
Price: £449 + VAT

Pros: Excellent data acquisition and signal processing • Good value • Powerful and fast

Cons: Not for novices • Needs the DDE • Documentation rather bare

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Folio for Archimedes	44.06	25.50
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First Steps to Words	20.68	8.95
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GAME SHOW



Coming real soon now, *Simon the sorcerer* - haven't we heard that one before, though?

It's show time! Well at least by the time you are reading this you will be either a) wandering around the show or b) wondering what you have missed as you couldn't make it to Wembley.

If my sources are correct, in the games department I would say *Wolfenstein 3D* is going to be taking the Star of the Show Award shortly followed by *Simon the Sorcerer*.

It seems this game is finally finished or very close to being completed and Gamesware has finally let the programmer out of his room and back into the light of day, all pale and drawn. I shall no doubt be acquiring a copy and giving it the airing that it has been begging for.

Thank you for the Games Reviewer entries. It would appear I misjudged the response and my work is really cut out getting through all of them.

I'll tell you, Blue Peter would have been proud of me with the sackfulls of mail I have been getting, in fact the stamps have been saved and the recycled discs are buying a new lifeboat for the Shetland Islands. Therefore, please bear with me as I assess all the trial reviews.

So far the standard has been very high and I hope to make an announcement in the next couple of issues as to which person(s) will be joining the team, basking in free software and sipping Pina Colada by the Europress pond (recently stocked with exotic fish).

The closing date for any more entries is this issue, so you have about a week to send them in, after that *stop!* No more. Finito.

I am thankful to reveal that *Flashback* has been a great hit among the majority of you games players and many have written in asking for solutions or passwords to various levels.

I promised US Gold that I wouldn't give too much away about the game but there appears to be one area that you are all getting stuck on.

In the final quarter of the game you find yourself deep in the heart of the main 'living' computer, locked into a room with a large, hanging, pulsating blob thing that seems, to me anyway, totally indestructible.

Just as you decide what to do, the mutating form-changers drip down to kill you off. Fear not though, help is at hand and here is the solution:

Enter the chamber then climb immediately up to the first platform and shoot once. The creature should respond to the shooting by showing a wound. Roll away, climb down from the platform and position yourself in a good firing position.

Shoot the advancing mutating creature then climb up to the first platform on the other side of the room – keep shooting the sack-like creature in the centre. Again, a wound will appear. Repeat this until you have shot each side a number of times. The creature will die and the door on the right will open.

It's probably best to backtrack and save your position if you still can – if you can't then it's onward and downward!

A couple of people have also written in saying that they have dropped the bomb into the computer and run clear to what appears to be the final chamber, but they keep getting blown up.

I have to admit that this did catch me out once and I can reveal that there is lifesaver. There is a lift in the right-hand corner of the screen – this will elevate you out of the game and into the closing credits.

Since cheats are very much in my mind at the moment, I shall ride high on my wave of popularity by starting a competition of sorts. A free game (of my choice) will be presented to the best and most original cheat or game revalation.

I'm only interested in the original and the bizarre, like certain weird 'bugs' or quirks in a game, or even hidden levels or code.

Send your entries to: Games Revelation of the Month, Acorn User, Europa House, Adlington Park, Macclesfield SK10 4NP.

Steve Atherton



ROBOCATCH

Supplier: Generation Design
Address: 2 Whitecliff Gardens, Blandford Forum, Dorset DT11 7BU
Price: £7.99

Many of you will be aware that I will review any game regardless of its background. *Caves of Confusion* was one such game that by other magazine standards would have slipped through the net and might have sadly gone unseen.

It was a great little offering with quite a few nice touches and an attractive price to boot. It's good therefore to see an equally enthusiastic follow up that, with luck, will allow the programmers to take things that stage further and hopefully hit the mainstream distribution outlets.

RoboCatch is the follow up in question from Generation Design and boasts auto ARM detection, 925K of mode 13 sprite data, four-track stereo sound and six different tunes.

A quick run through the storyline leaves you in little doubt that this is a shoot-'em-up and maybe not such an original one at that! But who cares? It's all about slight of hand and some serious firing decisions, not meaningful game plots!

The game is based on a mutated version of *Space Invaders*. To be more specific, it plays a bit like a game that was released about two or three years ago that had you protecting cows on the ground while the enemy advanced towards you. It also has a *Galaxian* or *Centipede* reload feature, that is you have to wait for your bullet to either make contact or leave the top of the screen before you can fire again.



You guide your craft, which resembles a Tripod (BBC series, early eighties), and blast at the nimble balls that dance around above you. Hitting one sends a chequered ball down that you must collect through the collection device mounted on the head of your craft. Collect and shoot as many as you can for bonuses and extra lives. Not content with the agile spheres, Generation has introduced a screen guardian that must be hit three times, each time releasing a sphere. The third direct hit removes it from the screen and transports you to the next level.

That may all sound very easy, but when you consider the fact that various missiles are raining down on you which must be avoided while you dance back and forth collecting the bonuses and chequered spheres, you get the idea that the further you advance into the nine levels the harder it is going to get.

The first time I sat down and played I reached level five, the second sitting saw me well into level seven. This alarmed me as I thought there might be a danger of completing the entire offering in an evening. Not so though, as there are five variations of the game to play. One such variant sees you shooting for all you are worth, but missing a sphere makes all the enemy (except the Guardian) invisible. You must then shoot wildly around hoping a bonus will drop and they all re-appear again. Difficult.

Power-ups are evident with the ship you guide receiving bonus points and weapons by shooting the indicated spheres before they disappear. This can give high scores and extra lives!

All in all a great follow-up at a price that is right. This company seems to be going from strength to strength.

Steve Atherton

Suplier: Powerslave
Address: PO Box 175, Enfield, Middlesex.
Price: £30

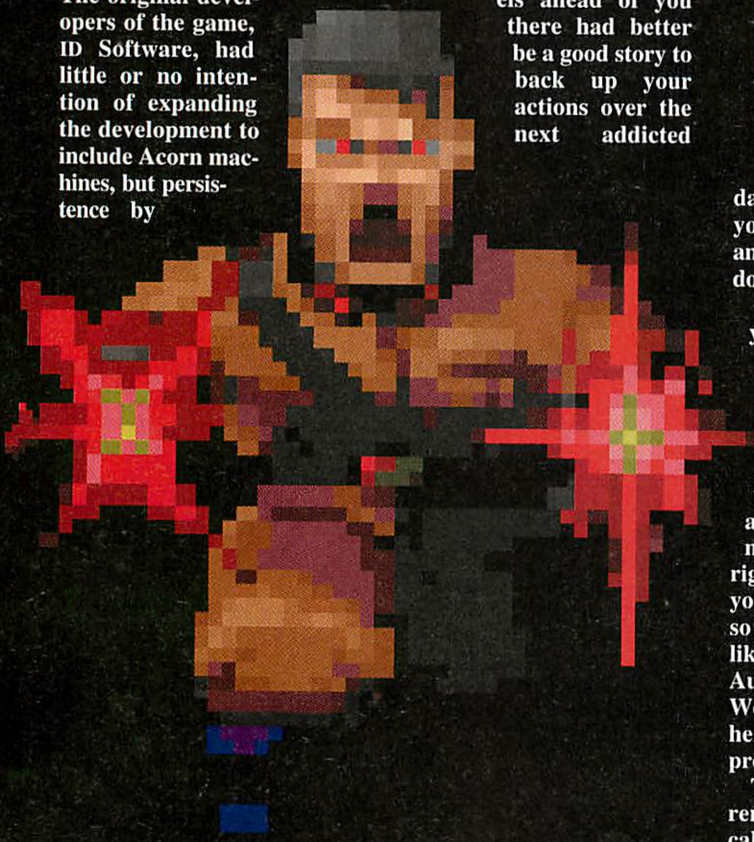


WOLFE

You lucky people. You lucky lucky people. Say hello to another truly great all-time classic that has taken the PC and Nintendo world by storm. Now I should be the first to point out that all this storming and laying siege to monitors took place years ago, and since then a sequel has received equal, if not more, attention among those funny DOS and Mario users.

Wolfenstein 3D is not a new concept, in fact wandering around a maze avoiding and shooting things is no ground-breaking routine, with the precedent set in Spectrum days and later established with the likes of *Dungeon Master* on the first (and still used) 16-bit machines.

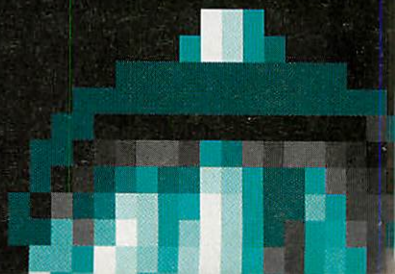
What perhaps makes this so different is the simplicity of gameplay and most of all the *speed*. It sure does shift to make a highly responsive product on all the machines, with the ARM3 processor supplying and supporting a staggering 35 frames a second. I'm impressed. The original developers of the game, ID Software, had little or no intention of expanding the development to include Acorn machines, but persistence by Powerslave, namely Eddie Edwards, has led to not only a conversion but indeed an *enhancement*. Ohhhh. Now my attention is truly focused. The specification is impressive, with the entire graphics engine re-written to run faster and smoother with a higher resolution than the PC version. With 60 levels ahead of you there had better be a good story to back up your actions over the next addicted days, and indeed there is.... you must kill all the Nazis and save the world. That will do me. Let's play!



The first things that strike you are the colours and textures. Everything is certainly vivid, with the Nintendo-style of mapping brickwork, wood and metal onto the wall proving a great atmosphere enducer. You move the character left and right and the reactions of your character on screen are so fast that it makes you feel like a certifiable Steve Austin. It's fast. Really fast. We're talking serious bionics here. Move forward and be prepared!

The whole control and feel reminds me of a sit-in game called *Star Wars*, a wire-framed offering that was so fast in the combat scenes you simply did not think about where you were aiming, you just made the odd 'suggestion' to your hands. *Wolfenstein* makes you do exactly this, with things moving so fast that aiming and accurate pulsing of the weapons becomes automatic, leaving an odd, satisfying feeling. Satisfying indeed when you consider who and what you are shooting at.

Set around the Second World War, it seems the evil dictator has allowed you access into his inner-most bunker, and armed only with





a knife at first, then various guns, you roam these dark passages killing all in sight. Now this may sound a bit gruesome and let me be the first to point out that blood and guts are present after a 'kill', so if it isn't sounding to your taste you have been warned. Not that it should really put you off. Things happen so fast there is little time to marvel at the different shades of red trickling towards you. A parody introduces itself about halfway through the game, with the maze you are in taking on a new meaning – some rather large PacMans start chasing you. No chance of turning round and eating them, so shoot for all you are worth!

Weapons provided start with the default hand knife and progress through to machine guns and pistols, as well as some other nasties. Use ammo carefully and most of all keep a look out for bonuses and re-arm points. Medical points also restore much needed health. The range of Nazis that come at you is certainly impressive. There are storm troopers, guards, special forces and even some twin gun toting Hitler look-a-likes. You would certainly not be mistaken as to the era the game has been set in. Just as a constant reminder as to your goal, though, there are several renditions of Hitler on the walls to keep you amused. Watch out also for the dogs.

The colour-coded walls help give you some perspective and aid in orientation when running around. Each room too is not a bare area, far from it as tables, chairs and even the odd decorative tree have been placed for effect.

NSTEIN 3D

Navigation, although helped by the coloured walls, does need some careful planing. Take the wrong route and you could find yourself in a corner with little or no chance of escape. To the rescue are secret passages which can reveal anything from deluxe weapons to gold and treasure. The aim of each level is to find the lift which gives you little breathing space between bouts and just opens to reveal the next set of crazy Germans.

Speed is very much dependent on the machine you use. I have played it on a few formats and there really isn't much to tell, certainly the A5000 provides the top-end power, but my humble A3010 I'm sure could give the game justice.

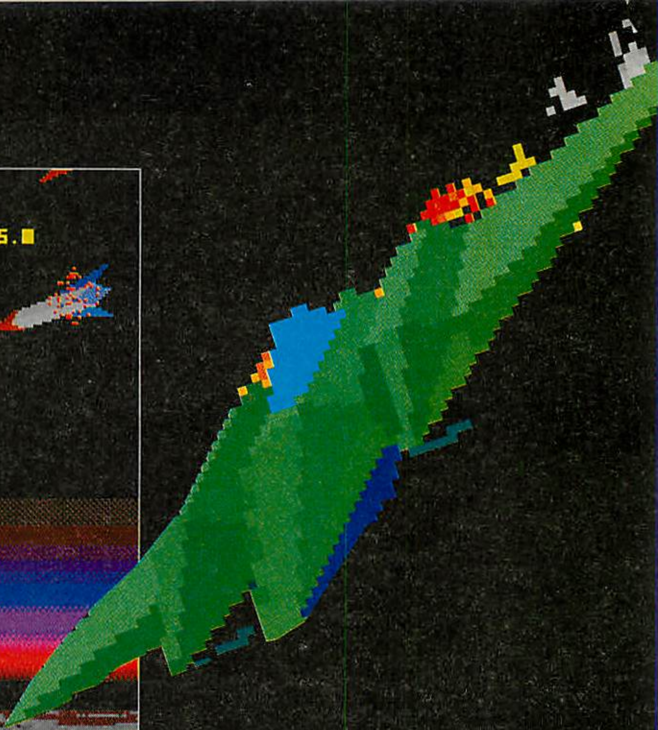
Clever routines have achieved this sort of speed, none cleverer than the large sprites that are used to portray the enemy and fixtures. At first this might seem a bit off-putting but as you start to explore, the sheer speed of reaction makes the resolution fine. Response seems crisp and clean with no 'oversteer' in the character placement and the gun is certainly more than accurate. The recoil on the pistol and machine gun is a nice touch too – you feel like you have actually fired something with menace.



I can't wait to really sit down and conquer this game. With so much to do on each level and so many places to explore, you can't help but get a touch excited. This game will be on show and available for play at the Acorn World '94 Exhibition this October and with a little luck we should have a copy in the games arcade which I shall be manning on the Friday. It will be interesting to see just what people make of it, especially those who have never seen the PC version. There are, as I said, over 60 separate levels and four skill settings to get through, so grab a comfortable chair!

Steve Atherton





STARFIGHTER 3000

Supplier: FedNet
Address: 66 Park Road, Duffield, Derbyshire DE56 4GR
Price: £29.95

FedNet is not only the name of a well respected developing team but also the name of a TV channel of the future. After buying up Carlton, Yorkshire and even HTV (thank the Lord) a channel of the future was established. Feeding off people's eager craving for death and destruction, *Stunt Racer 2000* was born and indeed aired to the waiting world.

Some years later, 1000 I guess, the stakes are higher with the attention turning skyward to a spot of prime-time death and destruction, with the added bonus of a bingo game (five ways to win) for the Sun readers just before the commercial break.

***Stunt Racer* was a great little number and the course discs released earlier this year added new life to the game and seemed to be paving the way for a *StarFighter* release.**

After a novel start-up procedure which involves a TV channel 'breakthrough' to your screen, a rolling demo gets you in the mood. By pressing the space bar, a pretty good picture can be built up of just what missions are to be completed and, to some degree, just what tactics should be necessary. The programmers have taken time to display enemy installations and time should be taken to study the detailed maps. It is only after making a few mental notes as to your position and direction that you will stand any chance of getting any points.

A very interesting feature to this game is the fact that you are not completely alone out there in TV land and help is close to hand, In the form of supporting squadron. You can quickly divert the attention away from yourself and let the more experienced pilots take the heat. To achieve this you send a series of sweeping commands that will put the support in a certain area or will follow your moves, firing the same weapons and at the same targets as you. This more or less guarantees a fuller sky and, of course, a lot more action to dodge between.

As you strike and dog-fight you are awarded points which can be exchanged for tune-up parts for the fighter. These range from weapon updates right through to airframe modifications which affect turning radius, speed and manoeuvrability. Tailoring your fighter to a particular mission is, of course, essential and can decide a battle before you even take off.

The graphics are very colourful and nicely textured, with some mottled green and blue for the land and sea. The attractive scenery is soon lost when you plonk the enemy in the frame with battleships, installations, carriers, airports and all manner of things launching everything they have at you.

One thing I did try, and was pleasantly rewarded, was to take my fighter as high as I could. Many a game I have played allowed led this manoeuvre, only to reveal nothing but a solid 'top' to the playing area, bouncing my ship down. Not here though. As the sky gets dark, the atmosphere peels away and very soon outer space begins to appear. Not only that but space stations can be seen and also some hostile emplacements in orbit! A nice touch.

Flying the FedNet fighter is very difficult at first and only considerable practice will make things any better. The ship is very sensitive in the roll and pitch, with the result of my first 'mix' of the yoke being a terminal dive into the ground. After figuring out that perhaps I should use the engines to power my way out of trouble, things began to get a bit easier.

This game is a great shoot-'em-up with just a bit of simulation to keep us all in touch with reality. After mastering the controls you should have little trouble in going further by ordering the support fighters around while you reap the rewards. Happy shooting!

Steve Atherton

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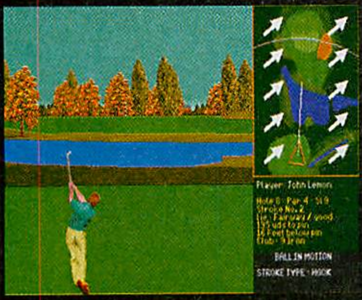
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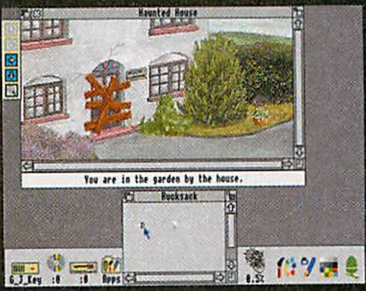
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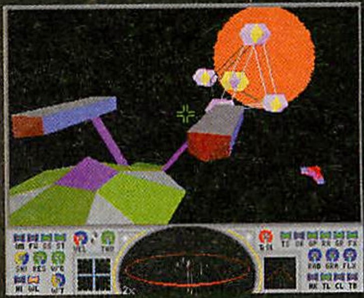

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FLASH

THE DEVEL

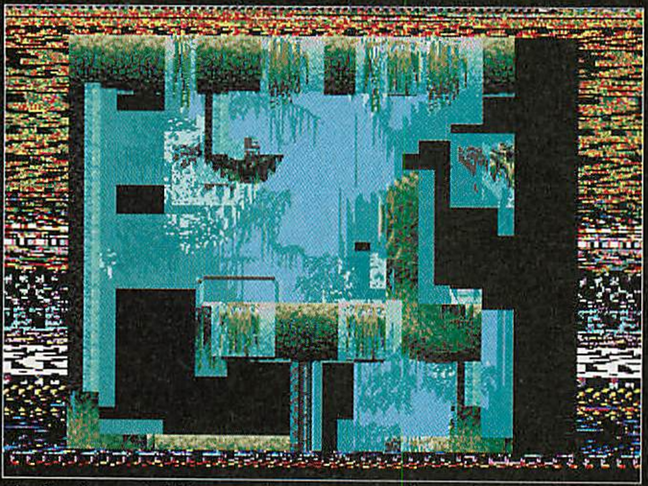
Dave Lawrence, who converted Flashback to the Archimedes, tells us how it was done in the first part of his two-part diary.

From the first time I saw *Flashback* running on a Megadrive I wanted to convert it. At the time I thought it highly unlikely that a high-flying company such as US Gold would back a project on the Archimedes. I was rather surprised then when, in about July '93, Acorn managed to persuade them that it would be worthwhile.

I had been involved with Acorn for many months (who seemed to be forever on the verge of securing all sorts of wierd and wonderful games titles) and was given first refusal at the conversion work – needless to say I jumped at the chance. Originally Acorn thought it would have to organise and fund the work and market the game, but US Gold wanted to do everything – except the programming that is.

I received an Amiga copy of the game in early October and spent the next week or so playing the game to get the hang of it all. After a brief chat to Stuart Hibbert (my 'producer' at US Gold) I received a disc of hieroglyphics (the source code), a book of hieroglyphics (the 'technical manual') and the green light to start work.

I kept a day-to-day journal of my work, and the following is based on this diary. (Actual dates appear in brackets.)



The first (recognisable) screen that the game code ever drew.

Early daze

Having spent a day or so with the source code, I found that I had not been provided with any of the game data – no graphics, sound, animations, levels, or anything. After a number of calls and faxes to USG and Delphine (the original French authors of the game) it turned out that this data didn't exist in any raw form, but could only be found in the data files on the distribution discs. In other words, I would have to work backwards from the finished game to extract the data.

(7 Dec) I started by transferring all the data on the games discs to the Arc, reading Delphine's documentation and attempting to make sense of the source code. All were gibberish, the data was compressed, the 'manual' was almost useless and the source code was hardly commented, written by three programmers with different writing styles – and had French labels and variable names! I almost wished I'd never started.

(4 Jan) Neither USG nor Delphine could provide any assistance with the lack of background information on the game. I was on my own with a boat load of French 68000 code, some very complex data structures and four months' development time. This was definitely not a two minute game.

I set about trying to display all the graphics in the game. Stuart was due to visit on 21 January and I thought it wise to prove that I could in fact manage this gangly beast. I worked through the cine sequences, the background scenery and the sprites, slowly realising how they all held together. All my development tools were written in BASIC for speed and on the 21st I was able to show Stuart all I intended. I also spent a large amount of time adding my own comments to the code, identifying important routines and generally trying to reconstruct a (ahem) flow chart of the game's innards.

By 7 February I had extracted all the graphics I could (but no means all of them) and had a general working knowledge of the game; room drawing, sprite plotting, animation, game logic, collisions and so on. I spent the next few days on



BACK OPMENT



Output from one of the early cine projectors.

what I deemed real work; converting data into a usable form (e.g. graphics from Amiga bit planes to Arc bitmapped, data from 68000 big-endian to ARM little-endian), drawing out maps for each level and designing some sprite plot routines.

Then on 11 February came a shock; USG sent the PC version of the game. This is considerably prettier than the Amiga version with many more colours (it runs in a VGA 256 colour mode rather than an Amiga 32 colour mode) and some extended cine sequences. Luckily I hadn't yet done too much work with the Amiga graphics so I was able to use the PC ones without too much wasted time.

So the game begins

13 February, and coding can be delayed no more. I set up my working directories and coaxed Acorn's DDE into life. I used Dominic Symes' unsurpassed editor *Zap* to write the code and *Amu* and *AAsm* to assemble it. I built various useful program modules full of variables, constants, memory management routines and so on. All very dull, but necessary when developing a large project. For the game itself, I began with the background construction routines.

Even at this early stage I had a prototype Risc PC, so designed the game to be able to make use of the true programmable palette of the VIDC20. I also decided to make the game VGA monitor friendly. This all seemed a lot of unnecessary work at the beginning, but I was very glad that I took the time to do it.

Four long days later (in general I was working 8pm – 4am) and the code produced something that could almost be Flashbacky. After this, things started to move a little better, the rooms started to take shape and all the sprite masking began to work. I added code to allow the cursor keys to move between rooms, and the levels could be explored. The VGA and VIDC20 drivers appeared in about an hour each.

(20 Feb) Serious effort put into extracting compressed data from the numerous data files associated with each level (the Amiga needed nine files per level, a bit of rationalisation and I got this down to two) and almost two days spent on isolating the final set of graphics – the little animated background items, such as the men in the bar and the wall fans.

To add insult to injury I received the 8086 source code for the PC version (26 Feb); yet more code to wade through.

Next, there was lots of hard work sorting out the internal management of sprites and their data structures, all with no obvious results. With roughly 650 animation frames for Conrad alone, all the main sprites in the game have to be stored, compressed, decompressed and plotted 'on the fly'; the possibilities for errors are quite amazing. Then (3 Mar), as if by magic, all the boring groundwork paid off and Conrad appeared on screen.

Animation came next, closely followed by foreground masking (so sprites could move behind certain objects). Then the simple code to detect when Conrad moved off the side of the screen. At this point, I implemented the 'Mr. Benn' mode. This let me move Conrad about with the cursor keys from screen to screen but without checking for walls. This proved to be a very useful debugging mode, and is in fact still present if you know how to find it.

The next few days (6-8 Mar) were spent typing in reams of code that would form the basis of the interpretter that forms the core of the game. Each object follows a series of instructions that make the game 'work'.

There are about 140 instructions all together, some trivial, some very complex; checking keys, looking for walls, inventory management, sending 'messages' to other objects (e.g. 'you've been shot') and collision detection, to name but a few. By starting with the simplest (key detection) I was able to make Conrad start to move properly, without the aid of Mr. Benn.

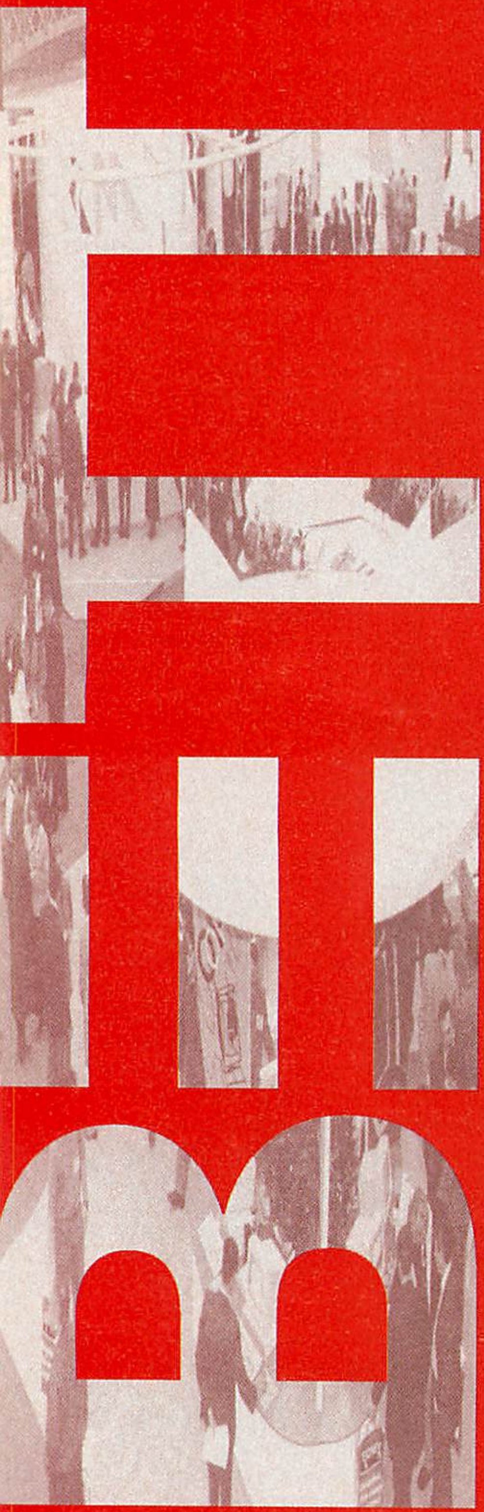
8 March proved to be an important day as pretty well all of his moves worked; walking, running, rolling and so on.

I also converted many of the wall-examining instructions and jumping, climbing, walking into walls, swinging and best of all, the emergency stop burst into life.

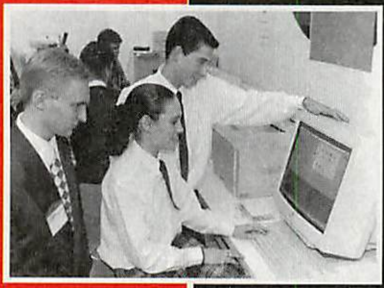
This seemed like a good opportunity to show USG how I was progressing, so the next day I sent them version 0.1 – the first of about a dozen test releases.

Next month the diary concludes. AU





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Clues

1 • The wait for a drive to locate data and begin reading it; when to pay by credit card? (two words)
2 • A computer – or a yuppie – doing more than one thing at once.
3 • A single picture in a film, or the surround for a picture.
4 • A standard for compressing and storing video, developed by the Motion Picture Expert Group. Hint: not Replay.
5 • This can store up to 650Mb of data; a double-barrelled acronym.
6 • The speed at which data is read from a drive; the cost of footballers?
7 • Carries CDs and golf clubs.
8 • Available on CD-ROM; drawing fastenings?
9 • Store your holiday snaps on compact disc.

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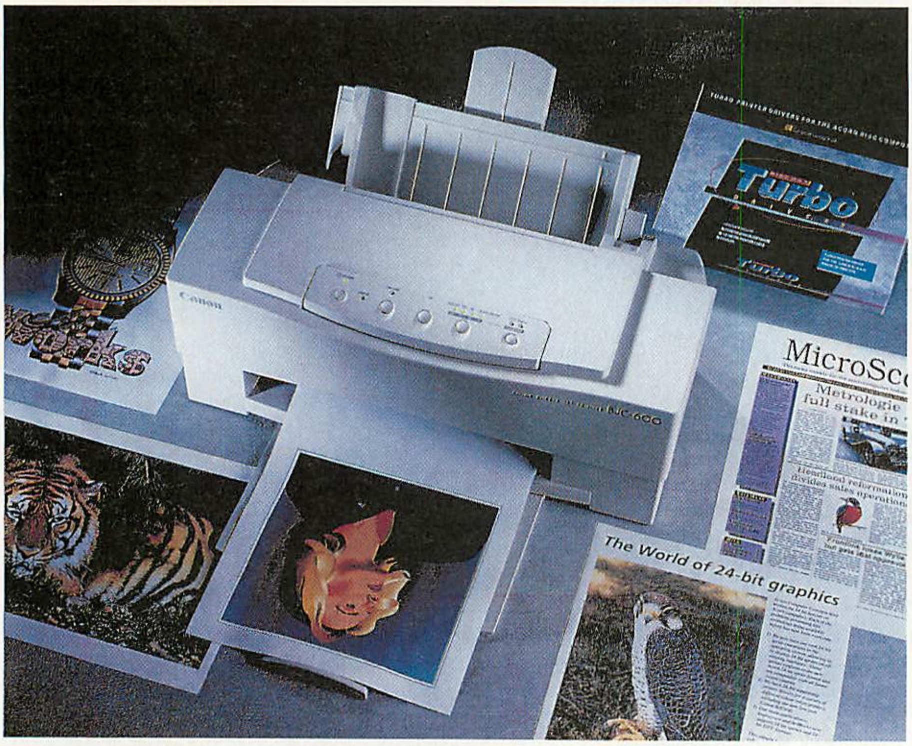
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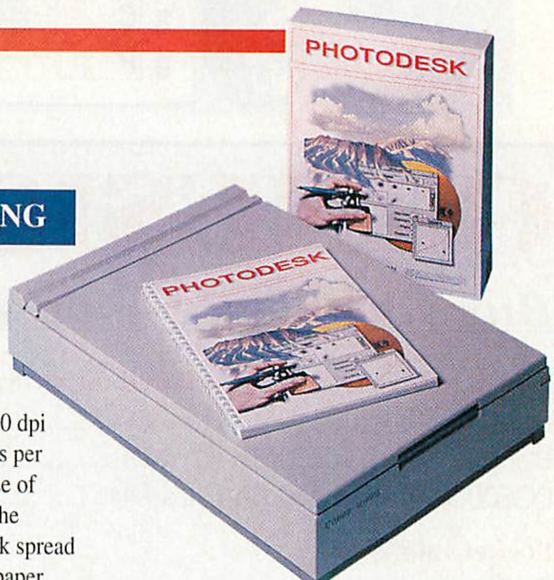
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Archimedes World

"Overall this is an extremely impressive printer and coupled with Computer Concepts' TurboDriver, represents the best colour printing system to appear on Acorn computers so far. "
Acorn Computing

Colour Solutions

ScanLight Professional Colour, PhotoDesk & the Canon BJC-600



COLOUR SCANNING

The IX-4015 is Canon's new A4 flatbed 24-bit colour scanner. It offers scanning resolutions up to 800dpi in full colour or 1200dpi in monochrome. The scanner itself is very compact and offers fast scanning speeds. This is a SCSI based device which works with all fully Acorn compatible SCSI cards.

PHOTO MANIPULATION

For manipulation of the image at a professional level, Computer Concepts have chosen Spacetech's PhotoDesk, a 24 bit painting and photo retouching package, worth £198 in its own right. PhotoDesk offers a wide range of advanced image manipulation features, such as 8-bit masking, pressure sensitive airbrush tool etc.

The package also includes scanner drivers and an interface lead for existing SCSI cards.

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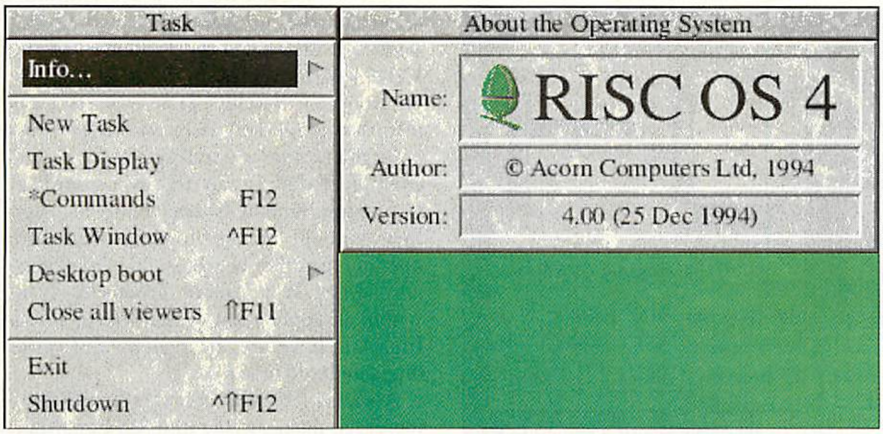
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Don't 3D-style windows give the desktop a more professional look? RISC OS 4; not yet available in the shops.

Andy George speculates on potential new features for the next release of the operating system RISC OS.

Time for a change?

With the imminent release of Windows 95 (codenamed Chicago) for the PC, and revisions of Apple's System 7 operating system tuned and improved for the PowerMac, now seems a germane time to re-establish RISC OS as the leader in GUI (graphical user interface) operating systems. In this article I aim to expose some of the weaknesses of current inceptions of RISC OS which might be addressed in the next release, RISC OS 4.

The Acorn RISC operating system has come a long way since the halcyon days of Arthur, and current revisions of RISC OS have done much to increase the functionality and ease of use of Acorn RISC computers.

The improvements introduced in the upgrade from RISC OS 2 to RISC OS 3.1 did much to silence the critics, with the introduction of multi-tasking filer actions, applications in ROM and latterly the *NewLook* tool sprites which have given the GUI a much needed facelift.

However, the changes from RISC OS 3.1 to 3.5 appear pretty cosmetic to the end user.

The RISC OS kernel

The absence of a centrally managed virtual memory management system is one of the weakest links in RISC OS 3. On both PCs and Macs, virtual memory has been available for some time.

Virtual memory (VM) allows the user to dramatically increase the amount of RAM available to the system by allocating a chunk of the free space on the hard disc to be used as slow, auxiliary RAM. Thus, a 4Mb system with a 20Mb VM slot configured becomes a 24Mb machine.

In the past, 4Mb might have seemed adequate and 8Mb a luxury, but the enhanced graphics capabilities of the Risc PC and the demands this places upon memory could be offset by the introduction of VM.

The lack of VM in current versions of RISC OS has already been addressed in part by third-party developers, particularly in the domain of bitmap graphics, although this is obviously less satisfactory than OS-based virtual memory which would provide support for *all* applications, without need for application-specific code.

The concept of multi-tasking is not new to RISC OS. However, of the two flavours of multi-tasking, RISC OS currently uses the less powerful, *cooperative* multi-tasking. Tasks running in the desktop politely request exclusive use of the system during which time they perform necessary tasks, after which control is returned to the user, or passed onto another task which requires it.

Although the time cycling between tasks is sometimes in the order of milliseconds, efficiency is lost as the machine is monopolised by a task, and often infinite loop errors occur before the task has had time to pass back control to the user, resulting in the machine crashing.

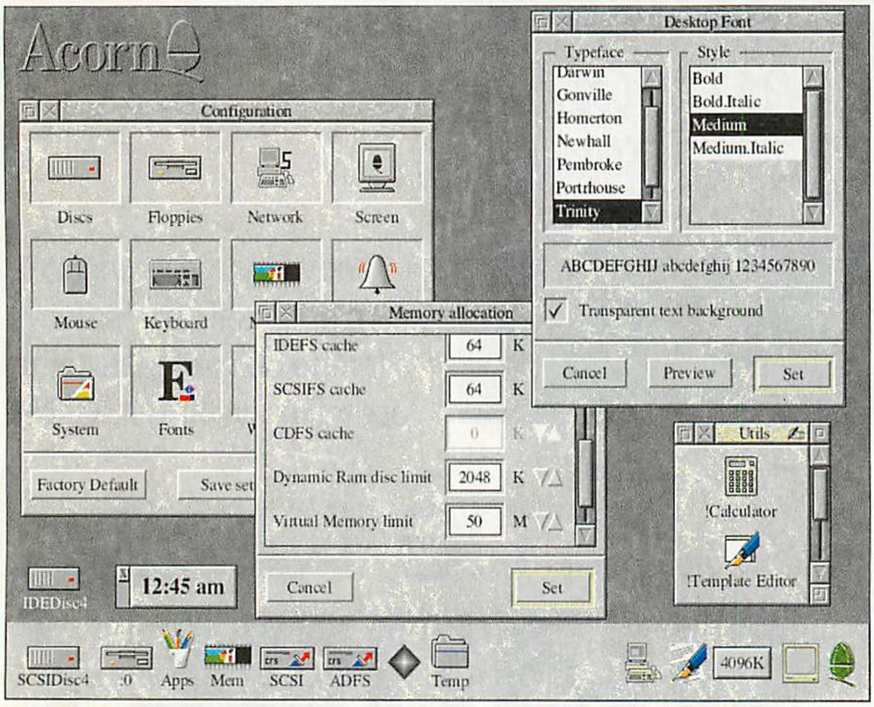
The second brand of multi-tasking, *pre-emptive* multi-tasking, is much more optimised and efficient. Rather than allowing tasks to compete for CPU time, the allocation of time is managed centrally by the operating system.

Each task is given a time limit in which to perform a certain action, after which time control must be returned to the user. The time between task cycles is very swift, making the computer feel much more responsive and preventing bug-ridden applications from locking up the computer.

Surprisingly, pre-emptive multi-tasking was on the Acorn agenda before the advent of RISC OS. Unfortunately though, the virtual collapse of Acorn in the mid 1980's and the subsequent rescue by Olivetti diverted attention away from some of the research they were engaged in at the time, and many of the ideas for the new operating system were dropped. Perhaps it is now time to see pre-emptive multi-tasking back on the agenda.

The absence of a multi-platform networking protocol in RISC OS is perhaps one of the prime reasons Acorn has failed to make more of an impact on the corporate and higher education market. The ability of Acorn RISC machines to integrate into a non-native network would lay to rest much of the criticism levelled by the industry at large that Acorn machines are too isolated from the industry standard. As PCs and Macs are already able to share network resources, isn't it

FEATURE



The shape and feel of things to come? While many of the changes are cosmetic, notice that filenames, for instance, can be longer than 12 characters, and the RAM disc can be re-sized easily.

time Acorn made its presence felt on multi-platform networks?

The RISC OS FileCore

Not so long ago, a 40Mb hard drive was considered large and out of the price range of most users.

Today, hard discs are not only affordable, they are faster and hold more data. Most systems these days don't ship without a hard disc, and the 420Mb IDE hard disc that comes with the top-level Risc PC is simply not large enough for some. However, the RISC OS filecore currently does not support direct access to drives greater than 512Mb.

Drives measured in gigabytes pose no problems on other platforms, and with the price of fast storage media dropping all the time, the lobby for big drives under RISC OS is gaining support.

In addition to recognising and permitting access to various drives, the filecore is also responsible for the way drives are written to and read from (i.e. how the data is stored).

Currently under RISC OS, a single directory cannot hold more than 77 entries. Also under the filecore, filenames are limited to 10 characters in length. Anyone who has spent time on a UNIX system will appreciate the flexibility of long filenames (255 characters), where filenames can be more descriptive, thus making files easier to recognise and retrieve.

While the Filer would need radical alterations to deal with UNIX-style filenames, only minor tweaks would be needed to extend the filename limit to 32 characters, say.

The GUI

One of the principal reasons that the Archimedes is doing so well in schools is the non-threatening, intuitive interface.

Put a child in front of a RISC OS machine, and they will probably trash your hard drive and mess up your CMOS settings, but they will also pick up the basics of the WIMP (**W**indows, **I**cons, **M**ouse, **P**ointer) environment quickly. However, RISC OS affords a great deal more control and finesse than other operating systems. For example, the ability to run several applications simultaneously and swop between them without the need to close one before opening the other is a godsend. Try negotiating your way round directories from within an application on the Mac to save a file. And have you ever seen solid sprite drags under Windows?

Also, the legibility of text is significantly increased thanks to the RISC OS Font Manager and its ability to render anti-aliased fonts. In the DTP field, this allows editors to have a greater degree of control over the final appearance of their work, offering almost full WYSIWYG at moderate cost.

Acorn should not be content to rest on its laurels, however. There is room for improvement in the way the window manager handles windows, as it does not yet support hierarchical windows which would allow panes on the desktop to be contained within a parent window, without the need to code routines to ensure that both windows move and function as one.

From a purely aesthetic viewpoint, the 3D appearance of icon and tool sprites could be extended to windows and menus. Draggable objects (menus, windows and so on) could be given dithered drop shadows and different parts of the desktop could be assigned their own font: one for Filer windows, another for the icon bar and so on.

The application suite

Much of the software that comes packaged with RISC OS is in dire need of improvement. Acorn should take a leaf out of Apple's book and purchase some of the best packages from the Free/Shareware scene with a view to integrating them into the RISC OS 4 application suite.

Maybe Acorn could team up with Jonathan Marten (author of *Draw+* and *Vector*) on a new version of *Draw*, and Dominic Symes (*Zap*) and Guttorm Vik (*StrongEd*) could be drafted in to renovate *Edit*.

Conclusion

The advent of the Risc PC and advanced architecture deserves to be harnessed and exploited to the full. GUIs can never be too intuitive, operating systems never too efficient, and RISC OS can never push back the boundaries of innovation too far.

However, whether you will be able to fit the RISC OS 4 ROMS into your pre-Risc PC machine is not clear at this time. The minimum recommended CPU specification for RISC OS 3 is an ARM250. Perhaps the demands that RISC OS 4 will make on the CPU will make upgrading your Archimedes unfeasible, but that remains to be seen.

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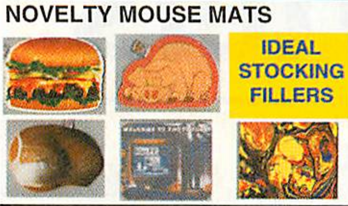
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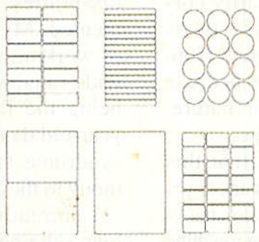
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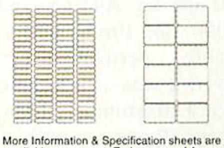
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Letters

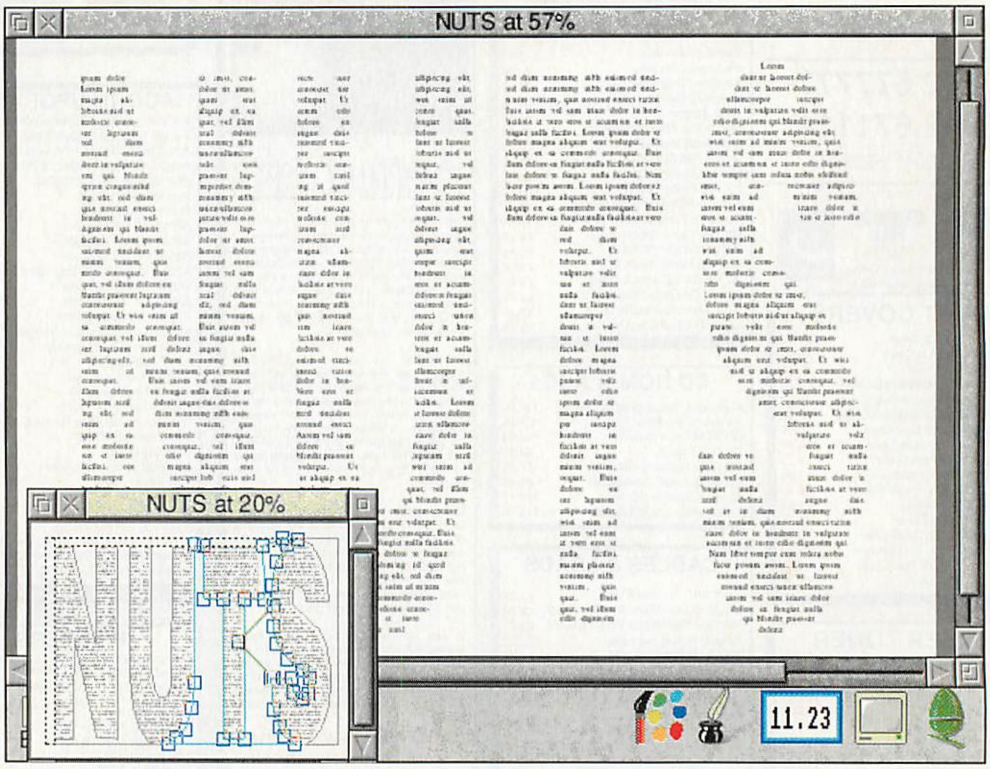
I was framed...

I was surprised at your reply to Keith Parker's letter in the October issue on the subject of irregular text frames. The solution is rather more simple than you suggest and a logical extension of the technique that you recommend.

There is no need to use lots of text-repelling frames, just a text frame and a pair of superimposed irregular text-repelling graphics frames.

A blank *Draw* file is all that is needed to define the two frames as graphic frames and hence to be made irregular. The three frames may be grouped together and moved as one entity. Moreover, the text remains editable in this group, and the effective 'frame' can even be re-entrant and the text obediently follows.

John McCartney
Shropshire



Creating irregular text frames properly in *Impression Publisher*, courtesy of Graham Jones

A much better technique, and totally obvious. Thanks to all of you who wrote in with variants on the above solution, not least Graham Jones who sent in the file shown in the screenshot. Not a comment on my method is it, by any chance? (MM)

Hidden costs

I recently changed my A5000 for a Risc PC because of the potential for greater expansion of RAM and the specified promise of progressive ARM chip upgrades, and I think your readers might appreciate being advised of the normally undisclosed costs which can be incurred by such an event.

Transit: Having arranged an exchange deal with a reputable company, the first hidden expense was the need to insure the old system in transit; the cost by Parcel Force was £30.50.

Hardware: I had successfully used a Qume LaserDirect printer for a number of years, both on an A410/1 and an A5000, and time, quality and reliable performance has proved it was a fair choice to make. Unfortunately I am told that it will not generally work with the Risc PC and further will not be supported by Computer Concepts, who originally supplied the machine. The cost: first the loss of a good printer which was originally priced around £1000, and secondly the need to buy another equable printer – new price at least £500, or possibly more.

Software: Cost of revision of *Turbo Driver* software: £11.50. Cost of revision of *AlphaBase*: free, though the database provided with the Risc PC states this is £5. Cost of revision of *ArtWorks*: £11.50. Cost of revision of *Advance*: free.

Help supplied: Acorn has thoughtfully provided a database of suppliers of versions of programs tested and untested, but it is a pity that you have to buy the computer in order to access this information.

It is also a pity that the information is not necessarily correct either because it is provided and accepted from third parties, or simply because these things, by their nature, need continuous update.

I continue to read that this machine is a great advance, yet it is also claimed that it is backwardly compatible. The machine is justifiably claimed as an advance but it can't be all things to all people, no matter how hard the designers try. It is equally true that some revisions of protocol do cause conflict with existing hardware and software, and arising from this there is, naturally, scarcely a mention of any hidden agenda or of the undisclosed costs which might be incurred by the purchaser of products from either camp.

John Charlton
Lanark

This letter is a cut-down version of John's original letter, which also pointed out a number of titles which *do* function with no problem. See Viewpoint. (MM)

All in a good cause

The benefits of using computers with people with learning disabilities are well documented. My own experiences of working with adults with a wide range of disabilities and being the father of a seven-year-old daughter with Downs syndrome is a positive testimony to these benefits.

I currently run a computer loan scheme based on Acorns across Devon and Cornwall. Basically, we make available an A3000 or A3010 with a range of software geared not just to the needs of the individual with a disability, but to the whole family, so they can experience the benefits for four to six months and realise for themselves the opportunities that computers can offer.

During the period of the loan I offer telephone and occasional visiting support to families to help them master the hardware and software.

The scheme has been running very successfully for the past four years, and as the word gets around I am increasingly being approached by individual families around the country who have either purchased an Acorn specifically for a disabled child, or are considering getting one. I do my best to assist, but obviously time and resources are limited.

I have recently been involved in setting up a loan scheme in the south-west, based in the Bristol area, and I would be keen to hear from any teachers or Acorn enthusiasts who might be willing to offer assistance to complete novices in that area.

Finding suitable software for adults is much more difficult

than for children, and I am sure there are loads of teachers and enthusiasts who have written programs to meet the needs of individual children or relatives. I would be pleased to hear from anybody using computers with people with learning disabilities with a view to sharing any knowledge and experience.

Contact me at: Computer Loan Scheme, 4 Fairfield Road, Falmouth, Cornwall TR11 2DN.

Bob Block
Falmouth

We're going to be covering Special Needs on Acorn computers very soon in *Acorn User*. It's an area where Acorn machines are very popular, but there are still gaps to be plugged. If you can help, do contact the Loan Scheme. (MM)

Funny business

Regarding 'End game', Letters page, September issue. Mr Hull may not have meant offence with his comments about games and games players, but I certainly took offence, and a gate!

Those comments are indicative of the worst kind of computer élitism; they make the 'my computer's better than yours' letters seem wholly innocuous by comparison.

'Let us not confuse' – how does Mr Hull propose to avoid this confusion when in a substantial number of cases the 'dedicated professional user' and the 'run of the mill' games player are one and the same person? Despite the stereotypical image of the average games player presented in the mass media, games players are anything but 'run of the mill'.

I earn my living, albeit meagre, from the professional use of my computer, and I also spend a large part of my leisure playing games on the same computer.

Help! I'm confused! Am I a 'dedicated professional user' or am I a 'run of the mill' games player? Maybe I have a split personality? Maybe the distinction is irrelevant?

Mr Hull's letter seems to suggest that playing games on a computer is something trivial that should be beneath a magazine aimed at dedicated users. Let me assure Mr Hull that there is nothing trivial in playing games on a computer and most games players are every bit as dedicated as 'professional' users, and frequently more so.

A computer is a tool, nothing more, that can be put to a variety of uses; playing games on one is every bit as valid as any 'professional' use, and frequently more enjoyable. It would be highly inequitable to banish games from a magazine aimed as the 'keenest Acorn users' simply to pander to computer snobbery, especially as some of the 'keenest users' are, in fact, games players.

I cannot see how money enters into Mr Hull's argument, but I would suggest that, for example, Computer Concepts has made more money from *Impression* than Krisalis has from its three *Lemmings* conversions in total; and, more generally, is there any games company making the sort of profits that Microsoft makes? I think not.

I have read every single issue of *Acorn User* and I can assure Mr Hull that coverage of games has, bar the occasional games issue, always been minimal: I have always thought a little more would not go amiss, but I simply read your competitors to account for the shortfall.

'All work and no play dulls me' – Charles Lamb.

Wijnand Thompson
Bedfordshire

As someone who achieved Élite status three times on the BBC version – and no, I'm not a mad games addict who does nothing but zap aliens in my sleep – I agree that you can be a serious user who plays games. And you can expect more games coverage over the Christmas period: look at this issue which, including the supplement, has a whopping ten pages of games articles.

Of course the games coverage in this magazine has always been aimed at the 'professional' games player anyway... (MM)

Viewpoint

You might have noticed that we've redesigned the magazine this month. The interesting thing – as far as Acorn users are concerned – is that the entire re-design was done on Acorn equipment, and then 'reverse engineered' onto the Mac. And the process of reverse engineering pointed out some interesting shortcomings in the universally-worshipped *Quark XPress*: suffice to say that it doesn't matter how expensive *Quark* is, for a magazine such as *Acorn User* the Acorn can be much more efficient, it just depends on what the staff are used to.

Judging by the response we got when we moved onto the Mac back in January's issue, you're probably sitting there thinking 'if they can do the re-design on the Arc, why not stick with it?' Well, have a look at the *Computing for the Family* supplement attached to this magazine – that was done on the Acorn system, and there'll be more Acorn-produced stuff in the magazine over the next few months.

The interesting thing, though, is not that the supplement was produced on the Acorn – anyone who has looked at the *Publisher Plus* review in this issue will know it's a more than capable package – but that it was, in the main, produced on an old Archimedes A440/1. The magazine re-design was produced on my five-year-old 4Mb system, and a Risc PC only took over when most of the hard work had been done. The same goes for the supplement: we only *needed* a Risc PC when the large scans were dropped in, and the A440/1 would have been more than adequate for the job if it had 8Mb of memory, a larger hard disc and a ColourCard.

The moral of the story is that it takes a hell of a lot to make any members of the Acorn range obsolete. Looking at the Free Ads section, it's obvious that a lot of Acorn users are flogging off all their machines to upgrade to a Risc PC, but if you can't afford the jump, don't feel left out: the number of Risc PC-specific packages is small, companies would be crazy to stop supporting RISC OS 3.1 machines overnight.

The *Impression* range is a case in point: all these products have been able to support the new 24-bit technology for some time – well before the launch of the Risc PC, in fact – so if you have an A5000, an A400/1 or even an original A310, then upgrading to RISC OS 3, some more memory and a faster processor gives you a system powerful enough to design and create entire magazines. And don't forget that Acorn is still making and selling the A3010, A3020 and A4000, which are in fact less capable than an older machine with an Arm3, RISC OS 3.1 and 4Mb of memory (bar the bi-directional parallel port and the high density floppy drive).

In fact, as the letter from John Charlton proves, upgrading to a totally new system can cost more than just buying the new computer. If you've got a Qume LaserDirect printer, a FaxPack, an Armadeus Sampler board or any other of the expansion cards which simply won't work on a Risc PC, then there's nothing you can do except sell them off as second-hand goods. You'll also have to shell out for upgrades to a number of packages that either don't work or only half work on the Risc PC.

In contrast, when I upgraded from an A440/1 to a Risc PC, everything worked first time except for my modem, and all that was needed was a new cable, which would have applied had I upgraded to an A5000. In any case, if money isn't an object, you might find you simply can't do some things with the new system that you could on the old one. If you rely on a double-width expansion card – one that takes up two full-size expansion slots side by side – then you'll never be able to use it with a Risc PC, unless you're lucky enough to own one that will still work after treatment with a hacksaw.

There are also a very large number of games that don't work at all, and of those that do work, quite a few run at silly speeds unless you turn off your cache. Sure, we can all live without a few games (though Wijnand Thompson may disagree), but how do you explain to the kids they can't play *Repton 3* because Dad's got a new machine? The answer is, you can't.

Mark Moxon

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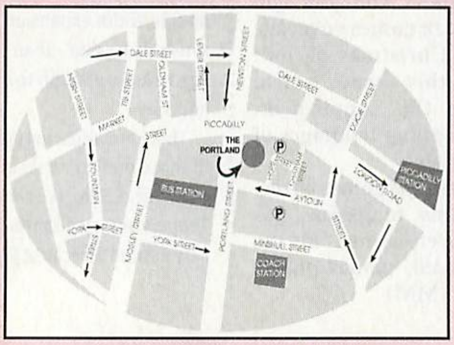
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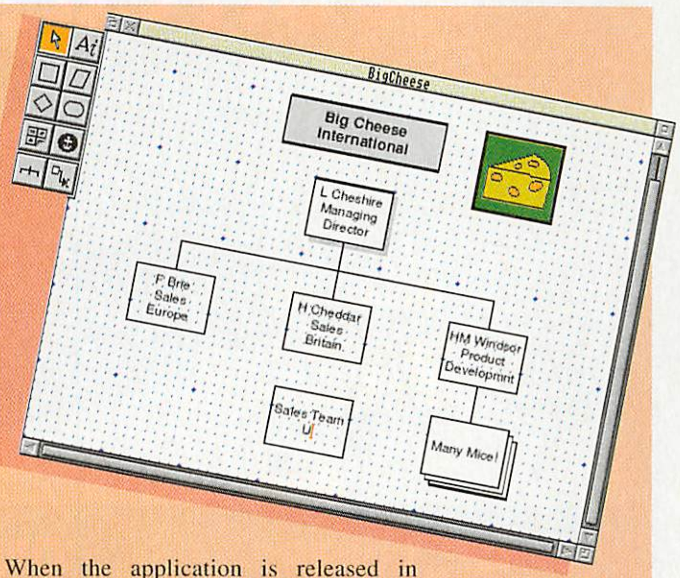
Think of a name for Dalriada's new application and win yourself a copy.

Dalriada Data Technology, best known to most Acorn users for its tabling application *TableMate* – which is bundled with *Impression Publisher* and *Style* – is about to release its latest product. But there's one small problem: it hasn't got a name yet. If you can come up with a name we like, you can win yourself a copy.

The new program is quite an innovation in the Acorn marketplace, as it is the first application which has been specifically designed for the production of flowcharts, organisational charts and annotated diagrams. Like *TableMate*, the application works with *Impression*'s new OLE facility, and has been designed to allow you to create good looking results in seconds, not hours.

For example, to make a line you simply select the line drawing tool, and click on the symbol to start from, and the shape to end at – the computer does the rest. When a shape is moved or resized, any connecting lines which are affected by the change are automatically re-created so that you don't have to spend your time deleting and making lines in *Draw*. This facility even tries to make lines as shapely as possible, using a combination of well-established design practice and the latest artificial intelligence techniques.

A generous selection of the most frequently used diagram shapes and symbols will be supplied with the program, each of which can contain graphics or text as you require, and each individual symbol can have its colour, justification and border settings changed independently.



When the application is released in November, the price of a single user licence will be £50. However, you can win a pack by sending in your suggested title for the program; the winner will be the one who comes up with the name that the judges believe most simply and accurately conveys the capabilities of the package.

Furthermore, there are four runner-up prizes of a copy of *TableMate 2*, the enhanced version of *TableMate*. If more than one entrant suggests the winning title, then the winner(s) will be drawn out of a hat. The decision of the judges will be binding and final. No correspondence will be entered into.

So, get your thinking caps on and send your entry to the address below to arrive by Monday 5 December 1994.

Dalriada Competition, Acorn User, Europress Publications, Europa House, Adlington Park, Macclesfield SK10 4NP

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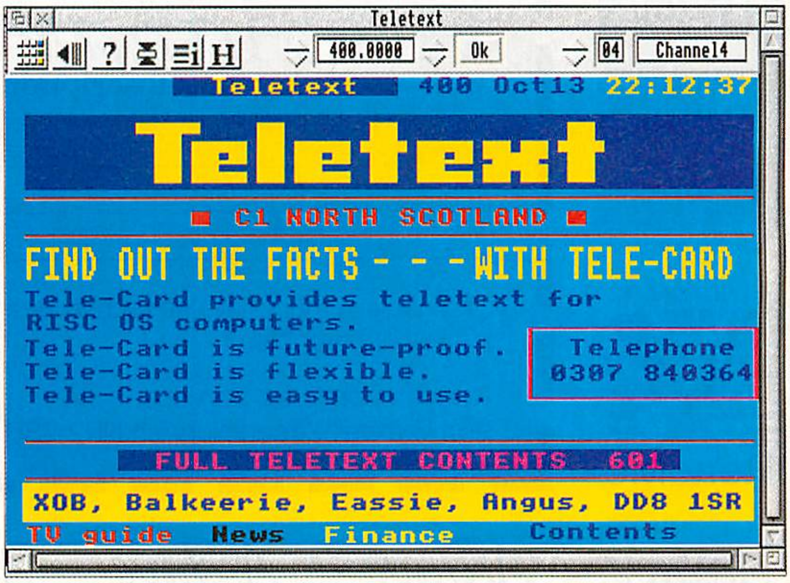
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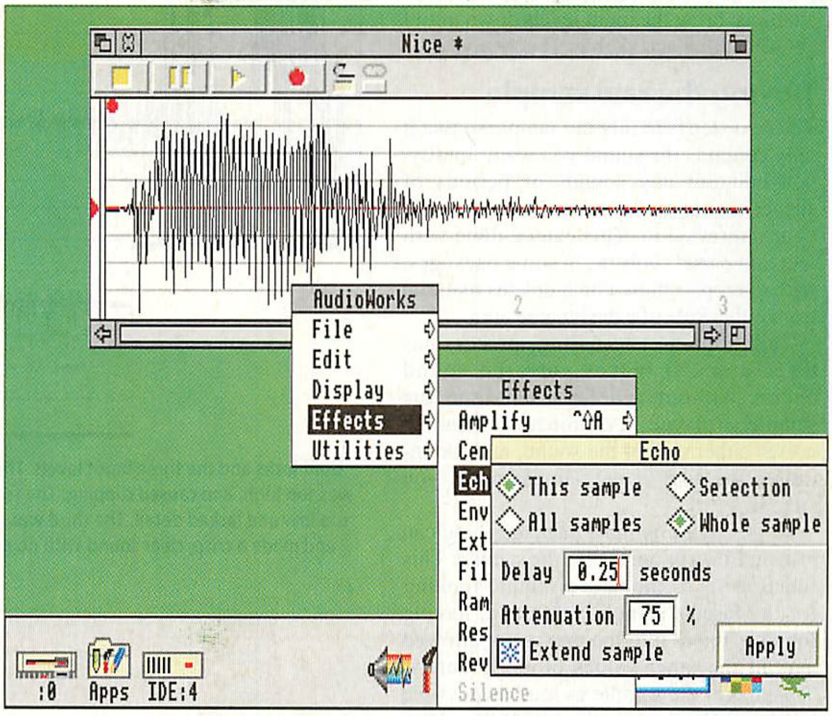
Practice makes perfect

Richard Garrett looks at the practicalities of sound sampling on the Archimedes.

Here's an experiment. Walk up to a hi-fi enthusiast and say: 'sound recording's easy, isn't it. You just plug in the tape recorder and press the record button...'. The enthusiast will probably faint. Once given mouth-to-mouth resuscitation, however, he will regale you with an extended diatribe on 'how to do it properly'.

Going into some depth, he'll discuss 'bias', 'EQ', 'signal to noise' and so on, but the upshot will be that, while 'pressing the record button' may get you a recording, you can only get a good recording if you know how to set the switches and twiddle the knobs on the machine.

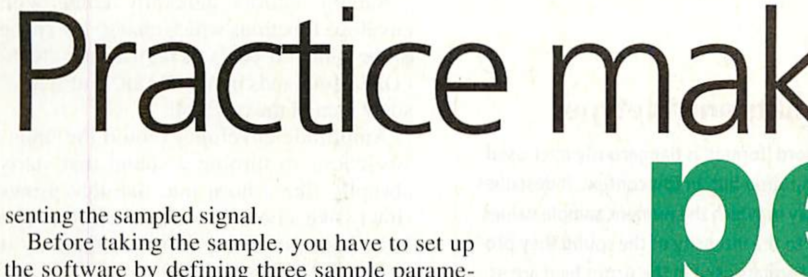
In sound sampling, the same principle applies – except the knobs and switches are in software. Let's say you've installed your sampling card, connected a microphone and called up a sampling package on your Arc. The main features on screen are a graph display and some 'tape recorder' icons and when you click on the 'record' icon the software draws a graph representing the sampled signal.



Using *AudioWorks* to create an echo effect on a sample.

Before taking the sample, you have to set up the software by defining three sample parameters. These are resolution, sampling rate and format. The first two were explained last month but, to recap, the higher the resolution (that is, the more bits used to make a sample value) and the faster the sampling rate (the more samples you take each second), the better will be the quality of the recorded sound. The different formats are explained in the box.

Having set these parameters, the software will tell you the longest sample duration you can record in the memory available. If this isn't enough, you can extend it by dumping extraneous applications, or by reducing sample quality. If you're only going to play the sound through one little speaker in your computer, then 'CD-quality' may be a little more 'hi-fi' than you need! The next stage is called 'taking levels'. This is to say, playing the sound to be sampled a few times and adjusting the input levels on the sampling system until you get the best quality. How you do this will vary. In some systems, you adjust a 'slider' in software; in some you change the volume on the audio device you're sampling; or, with a microphone, you move nearer to or further away from the sound source.



A typical glitch, due to bad editing, which appears as a sharp discontinuity in an otherwise smooth curve, and will cause a sharp, unpleasant click when the sample is played.

In each case the object is the same: to make the sample as loud as possible without creating distortion ('clipping'). On a tape recorder, you'd do this by adjusting levels on a meter but, in sampling, you just record and discard 'test' samples until you get a high-level undistorted signal.

On screen, an under-recorded sample will appear as a puny squiggle that barely departs from the central axis and will be quiet and lack detail.

In an over-recorded signal, the line will jump abruptly around the whole vertical axis and sound distorted when played back. A 'nice' signal, however, will just fill the whole vertical axis when it hits its maximum level.

My favourite method of taking levels is to start with a fairly low level signal, sufficient to see the basic shape of the undistorted curve, then to take an over-recorded sample and, in subsequent

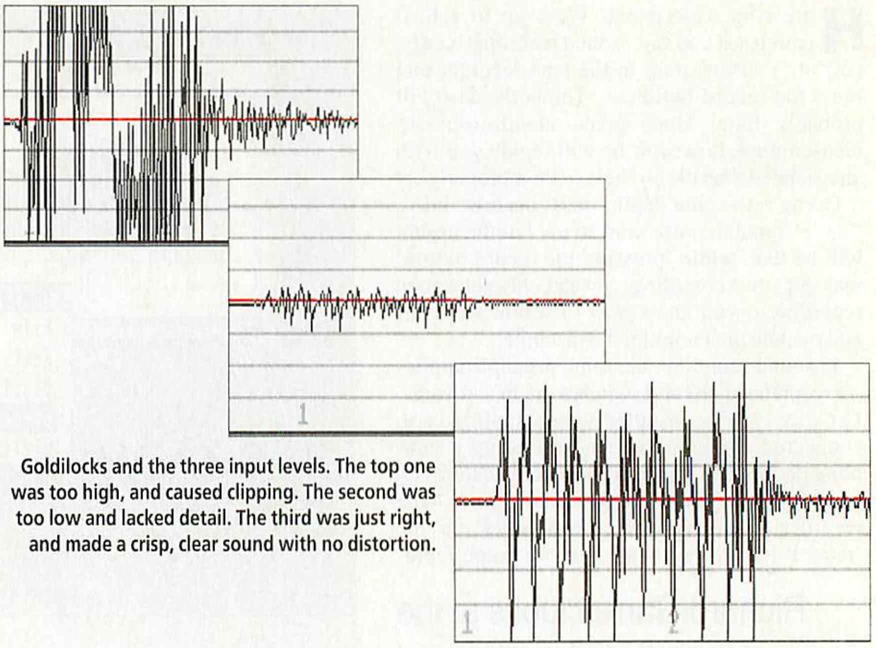
attempts, bring the input levels down until I get something acceptable. Then I save it.

Tidying the raw sample

The next step is to tidy the sample so that it only contains the sound you want. Firstly, you edit out any sounds or periods of silence that occur before and after the stuff your interested in. This can be done with 'cut and paste' tools or, in some packages, with a 'crop' option which deletes material from either side of a designated area.

This 'topping and tailing' process has three aims: it makes sure the sound occurs without a delay each time the sample is played, it eliminates unwanted noises either side of the sound, and it minimises the size of the sample when you store it.

At this point, in most packages, you can also optimise or normalise the sample. This function scans the entire sample looking for the largest sample value and, having found it, raises it to the maximum allowed and all the other values proportionately. This makes the sample as loud as possible by stretching it vertically to fill the entire range of intensities available.



Goldilocks and the three input levels. The top one was too high, and caused clipping. The second was too low and lacked detail. The third was just right, and made a crisp, clear sound with no distortion.

So why spend all that time taking levels if we have an in-built function that maximises the signal for us? The reason is simple. If you under-record a sample, you may only use, say, five or six bits of an eight bit bandwidth. In effect, you make a five or six-bit sample and subtle details in the sound will be lost due this reduced resolution.

When you amplify the signal to fill all eight bits, no new information is added, you just get a louder sample that still lacks detail. There is no substitute for a well-recorded raw sample.

Editing and FX

By now we should have a useful sample of 'real' sound but realistic sounds are not the be-all and end-all of sampling. You can take the process further with numerous editing facilities and effects.

Most packages use 'cut and paste' editing which, like its counterpart in word processors, art packages and so on, allows you to copy or extract data from one part of the sample and move it or duplicate it somewhere else.

You can also designate a loop within the sample so that a selected chunk of data repeats over and over when the sample is sustained. In these processes, however, you must take care not to create glitches.

A glitch happens like this: If any two chunks of sample data are joined together and the two sample values at either side of the 'join' are of significantly different intensities, when you play the sound an audible click or pop, called a glitch, will occur at the splice point.

In short loops, this becomes a repeating click or even a sustained tone that can obscure the sound you really want. To avoid this, it's best to make edits whose edges join up (preferably at the middle of the graph) and form a smooth curve across the seam.

Sample editors generally come with envelope functions which change the shape of the sound. If you've ever used the ENVELOPE commands in BBC BASIC you'll have some idea of the concept.

Amplitude envelopes mould the intensity curve so turning a sound that starts abruptly like a horn into one that grows slowly like a bow drawn over a fiddle. The basic tone stays the same but the way it grows and dies is changed.

Pitch envelopes raise or lower the original pitch as the sample plays back. Their most common use is to create vibrato by making the pitch oscillate around a central value.

Most packages also allow you to shift the pitch of the whole signal (transpose), add echos, reverse all or part of the signal and hosts of other creative stuff.

Summary

While we're on the subject of being creative, here's a small warning. Sampling is about editing sound data in a graphical environment. It takes a while to identify all those squiggly lines as actual sounds.

The software, meanwhile, contains powerful tools that can radically alter all your data at the touch of a button and easily turn something really good into something dreadful.

Therefore, take your time and save each subsequent version of your work under a different filename. That way you can always drop back a step or two when things go wrong. Persevere and you'll get the hang of it.

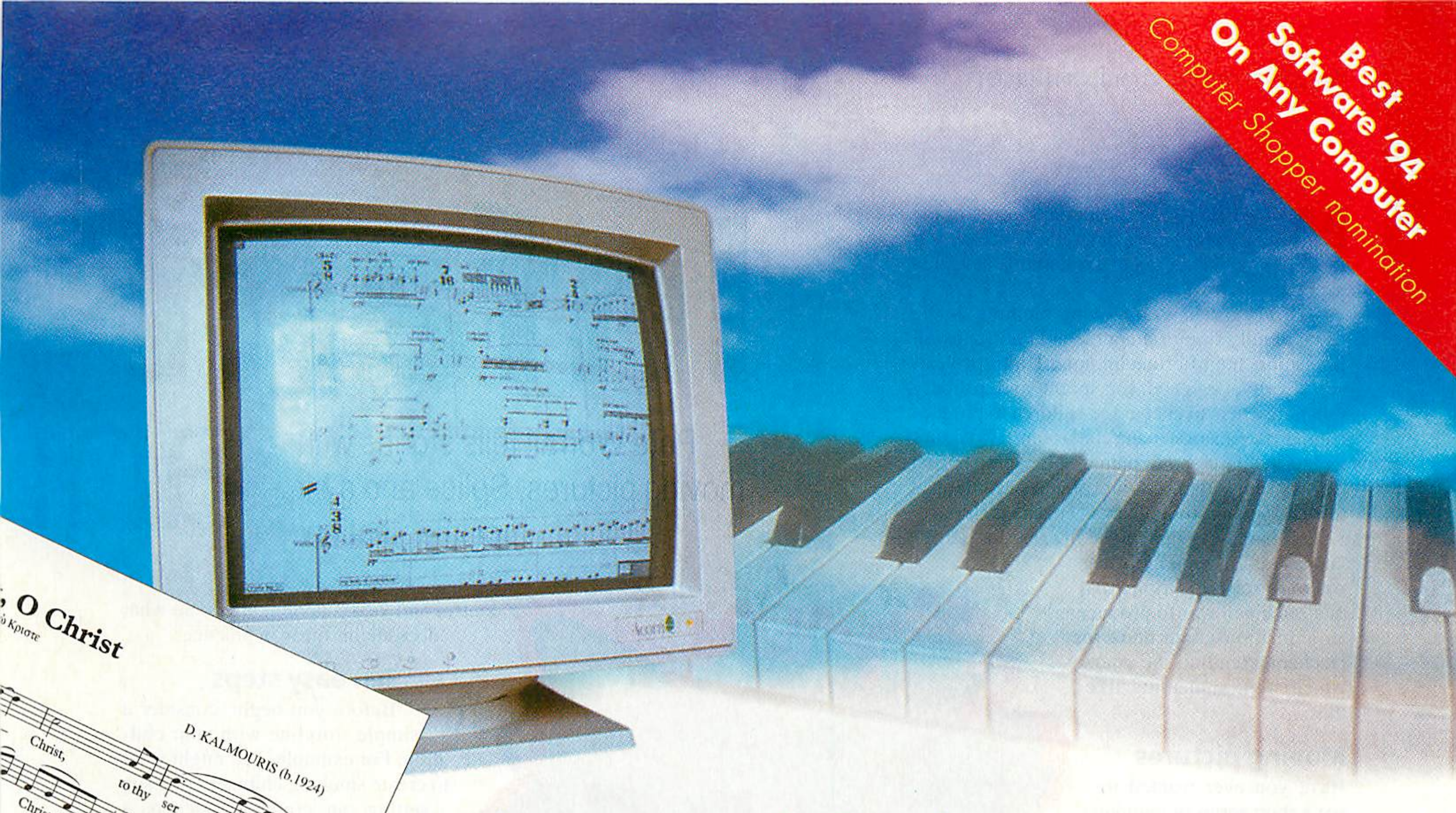
Oh. One more thing: when you're up at four in the morning perfecting your next 'death rays from space' monster sound effects on twin Marshall 100 Watt amplifiers – remember the neighbours! AU

Formats and filetypes

The word 'format' is dangerously over-used in computing but, in this context, it describes the way in which the numeric sample values relate to the intensity of the sound they produce. Formats used in the Acorn field are as follows:

- Linear signed: samples in which sounds are 'quantised' in equal intensity levels ('linear') and stored as positive and negative binary numbers ('signed') indicating the intensity of each sample value. Available in 8-, 12- or 16-bit resolution.
- Linear unsigned: as above, but sample values are all stored as positive numbers. Also available in 8-, 12- and 16-bit versions.
- Logarithmic: an 8-bit non-linear format, favoured by Acorn, in which sounds are quantised in smaller steps at lower intensity levels than at high levels. Because more detail is stored in quiet parts of the signal, this gives a subjectively better quality sound than a linear sample of equivalent resolution.
- μ-law: 8-bit logarithmic format favoured by Sun and NeXT systems.

Formats' should not be confused with 'filetypes'. Filetypes are the forms in which particular packages and systems store samples on disc. On the Arc, these include *AudioWorks*, *DataVox*, *Armadeus*, *MicroSoft WAVE* (.WAV), Arc data and Relocatable Modules. Whereas different sample formats have an effect on sound quality, filetypes should have none.



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- new *Virtuoso 7* program extension now available – adds many further sophisticated features such as hanging punctuation and re-spacing of arbitrary passages of music.

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Infant ani

Pete Worrall tells stories with moving pictures, Splice and a bit of imagination.

Multimedia is one of the buzzwords in the Acorn world these days, but how easy is it for very young children to explore this new area in practical terms?

'Telling stories with moving pictures' is the user-friendly title of a course held at Sandwell Education and Microtechnology Unit last year, specifically designed for infant and primary school teachers to encourage children to produce computer animation in the classroom. Two issues had to be addressed in planning the course; first the software had to be low cost and second it had to be easy to use for both teachers and children.

My search was short-lived because, as we all know, Acorn computers has software for all seasons. All that remained was to produce an animation guide book for teachers attending the course which went something like this...



Moving pictures

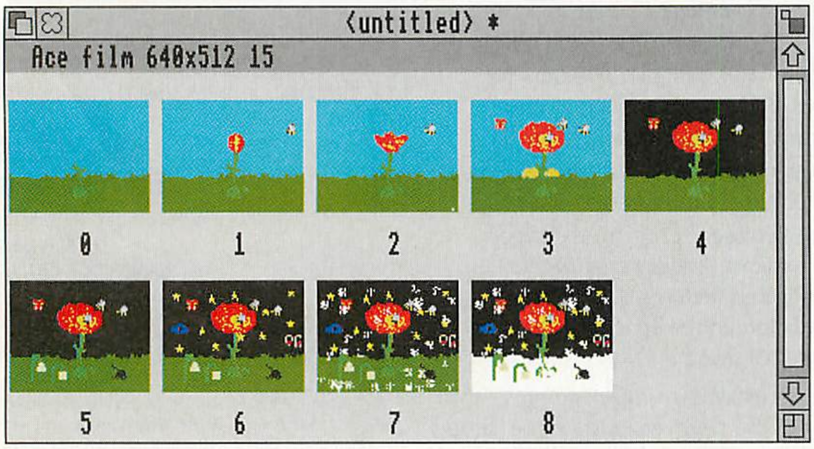
Have you ever wanted to see a short series of computer pictures turned into a film and played back on the screen? If so read on.

First Paint from Primary Art Software is ideal for creating your sequence of pictures. This art package is beautifully designed with an extremely clear tool menu, making it ideal for the younger artist. The main advantage in using this package is the ease with which drawings may be saved. Easy saving is really important as you don't want your train of thought to be interrupted.

You can always use another art package – you can even use *Paint* if you want – as long as it saves pictures out as sprites.

Splice from Oak Solutions is ideal for creating the animation from the sequence of pictures. It could be described as a flick-book creator and will accept freehand, scanned or digitised images.

Once the sequence of numbered sprites has been created, it can be dragged to *Splice* for automatic conversion into a single film format file. Your film can now be played back 'live' on the computer screen using the PD software *Projector* (supplied with *Splice*). There are menu options to control the playback speed plus freeze frame control and yoyo, among others. So what does all this mean in practice?



Films can be assembled from separate frames by importing them into *Splice*. Here they can be viewed in sequence, or saved to *First Paint* for editing of individual frames.

Ten easy steps

Before you begin, consider a simple storyline with your children. For example, you might want to create smoking chimneys, the sun setting, an erupting volcano, a growing plant or a smiling face turning sad. Produce several ideas on paper to begin with, showing the changes taking place in your story. Then choose the best sequence for *First Paint*.

- Install *Splice* onto the icon bar.
- By clicking on the *Splice* icon on the icon bar, you will open a window to set up your film. It is a good idea to change the dimensions of the window to around 640 by 512. This will ensure a bigger screen for playback.
- Click on the OK button, and you will see the *Splice* window in which to place your sprites. Load your work disc containing the series of sprites in *First Paint* and drag the sprites into the *Splice* window.
- The sprites will appear as small, numbered pictures in the *Splice* window.
- Save your pictures as a film by using the menu produced by clicking with the Menu button on the mouse over this window.
- Drag the film format file – which contains all your pictures in one file – onto a disc to save your film.
- Load *Projector* supplied with *Splice* onto the icon bar. Drag your film onto *Projector* to see your film in action.

Put to the test

Once the teachers had mastered these techniques, the next stage was to try them out in the classroom. Young children are highly imaginative uninhibited story-tellers, so it came as no surprise that a few weeks later I received four discs containing animation ranging from a house catching on fire to trees in autumn changing colour.

My favourite sequence, simply called 'Bang', came from Sandwell's Moat Farm Infants School, describing the dangers of chewing green bubblegum.

Bang begins with a smiling face slowly being enveloped by the bubble. In the brilliant penultimate frame the 'surprised' eyes say it all, capturing the moment exactly. This is the only

mation

frame in which the eyes are altered and it makes me smile every time I see it. The dramatic final frame is duplicated several times in Splice which means that it stays on the screen a little longer. In my opinion the simple ideas are always the most effective.

Animation ideas

Animation can be used in many different ways, for example themes such as health or safety issues (e.g. a 'be careful with fireworks' sequence) could be turned into films and be left to play back on the screen in a continuous loop.

- *Splice* will save your animation sequence in a single sprite file which can be loaded into *Paint* for frame editing. This can then be reloaded into *Splice* and saved as a film.
- Your films and *Projector* can be stored onto a disc and distributed freely to other schools, so you can share animation ideas and tricks of the trade.
- Timing is extremely important, and sometimes it is useful to duplicate important frames in *Splice* several times for maximum effect on playback by selecting the 'Create frame' option on the menu.
- It's a good idea to print out the important frames for display so that ideas can be exchanged.
- Text can be included directly in the pictures using *First Paint*'s extremely clear Junior font. This is useful for including introductory titles or credits at the end.
- Very young artists can experiment with *First Paint*'s easily accessible preloaded images, such as butterfly bee and star stamps, for those extra special effects.
- Don't forget that later on the films, sound and text can be used in a multimedia package such as *Genesis Professional* to create a talking moving book.

Simple multimedia

The final film is not, however, the end of the story. Now it's time to channel enthusiasm into writing and sound. It is important to remember first that the individual frames are stored on the *First Paint* workdisc for easy use in a DTP package so that any text can be combined with the pictures.

Before you do this, leave the film playing in a continuous loop on the screen while children prepare their written ideas on paper – you can even play several films on screen at the same time for group activities.

Secondly, your silent film requires sound and believe it or not this can be easily accomplished. *Talking Pendown* from Longman Logotron is a versatile piece of software which will allow children to write about their animated story on screen. Sprites can easily be loaded into *Pendown* and scaled to an appropriate size before the text is added. In certain cases it is also worth combining the individual frames together and creating a composite containing all of the action.

The additional bonus is talking text. This can be found in the speech section on the menu and has playback options for individual letters, words and sentences.

Best of all it can be configured down to a window showing a basic page without tools, so that children can concentrate on their writing. As they grow more confident you can introduce more of the tools; in other words the software grows as the children grow.

For a recorded soundtrack try using Oak Solutions' excellent Oak Recorder 2. This is a microphone that connects to the parallel printer port of the computer, powered by the *Sound Lab* application, allowing voice, sound effects and so on to be recorded, played back and edited – you can even set the time of the recording.



A graphic example showing the dangers of chewing bubblegum.

This enables you to indulge in live animation karaoke sessions which can be saved and played back with your film running at the same time

You can even copy and duplicate the best bits of the recordings. In my opinion the Oak Recorder is the obvious introduction to sound on the Arc and is fun to use at the same time.

So it's take two for lights, action, sound and remember, it's not as difficult as you might think. Combining media in this way introduces young children to the world of multimedia in a simple, cost effective and logical progression, from pictures to film, text to sound.

So get your stories moving; it may not be Disney, but it's great fun! AU

Product details

Product: First Paint
Supplier: Keyboard Technology
Tel: (0509) 672222
Price: £34 + VAT

Product: Splice
Supplier: Oak Solutions
Tel: (0113)-232 6992
Fax: (0113)-232 6993
Price: £30 + VAT

Product: Oak Recorder 2
Supplier: Oak Solutions
Price: £40 + VAT

Product: Talking Pendown
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Delivery for 2000 sheets £4.26 when purchased without printer

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As Head of Languages in a London comprehensive school, I'm keen to incorporate Information Technology into language lessons. It's been tricky finding good software, and as a result we've had to write much of our own material or customise existing packages.

I was intrigued to come across *10/10 French* which is a collection of six games designed for the National Curriculum. The software also boasts a personalised chart of a student's achievements.

The cop

The player discovers French words, phrases and sentences and points to them on moving targets. The idea is quite good, but the graphics are grainy and many food items look quite inedible. Topics covered are food and drink, quantities and shopping. Quite how the game relates to the French police force I can't imagine.

The tower

Answer questions correctly to stop the insects crawling to the top of the Eiffel Tower. Topics are musical instruments, hobbies and daily routine. Despite the fact that the ants move at a geriatric pace and don't pose any real threat, the game is good fun, although I do have reservations about the higher levels.

Word search

Follow clues to find hidden French words. Topics are pets, family, colours, body parts and illnesses. This game would be educationally sound if lower case letters and accents were standard. Pupils hoping to make a good impression when abroad should note that '*sein*' means 'breast' not 'stomach'!

Link up

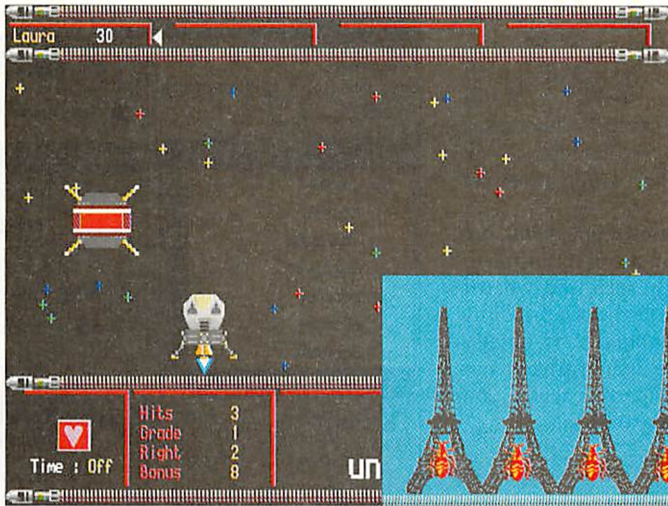
This is a traditional 'pairs' game, matching pictures and phrases. Topics are the town, time and France. I liked the fact that the items can be covered up to make the game more difficult. Again, the graphics are dubious; the *poissonnerie* appears to have a nuclear warhead flying towards it. Level four has some good quiz-type geography and culture questions.

Rescue

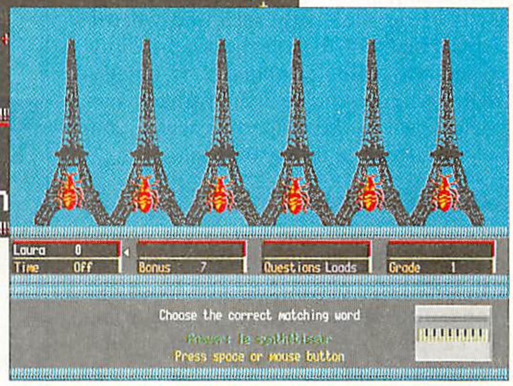
This game looks like Space Invaders, with the player travelling through space, following clues and collecting French words and phrases. Main topics are school and careers. Some of the grammar exercises are both difficult and pointless.

Stones

This is a sequencing game, moving from simple number chains to some ridiculously difficult mixed-up sentences which still look mixed up when the problem's solved. Topics covered are cardinal and ordinal numbers, days of the week, months and holidays. Once again, the highest level requires a degree of sophistication which seems incompatible with the childish presentation of the game.



Catch the correct objects to score.



Answer the questions correctly to stop the insects climbing up the Eiffel Tower.

Pour les enfants

Rebekah Gall takes a long hard look at 10 out of 10's contribution to French lessons.

Conclusion

I tried these games on a 12 year old who has just finished her first year of French. She enjoyed levels one and two of all six games and found the material helpful when revising the topics covered at school.

However, I do have serious reservations about the quality of this material. It is disappointing that there were so many mistakes in the French, throughout all games and in the interim instructions. Among the most offensive were '*subjet*', '*une gateau*', '*vêtememts*', '*elles perd*' (sic).

It is a shame that instructions for levels one to three are in English. Teachers now use French for all classroom instructions, and target language teaching is one of the most important aspects of the National Curriculum.

My final criticism is that there is too much emphasis on grammar. This package does not rehearse the skills needed to succeed at GCSE – it has a distinctly O-level feel about it. The 'traditional educational values' mentioned on the packaging do not necessarily help our children to be successful within the existing examination system.

I would only consider using this material if the publishers produced an error-free version and then only with levels one and two, for 11 and 12 year old pupils. I'm amazed this was voted the best educational software by *Acorn User* readers. It just shows what advertising will do. AU

Product details

Product: 10 out of 10 French
Supplier: 10 out of 10 Educational Systems
Tel: (01142) 780370
Price: £25.95

Pros: Fun to play • Improves arcade game skills • Clever marketing

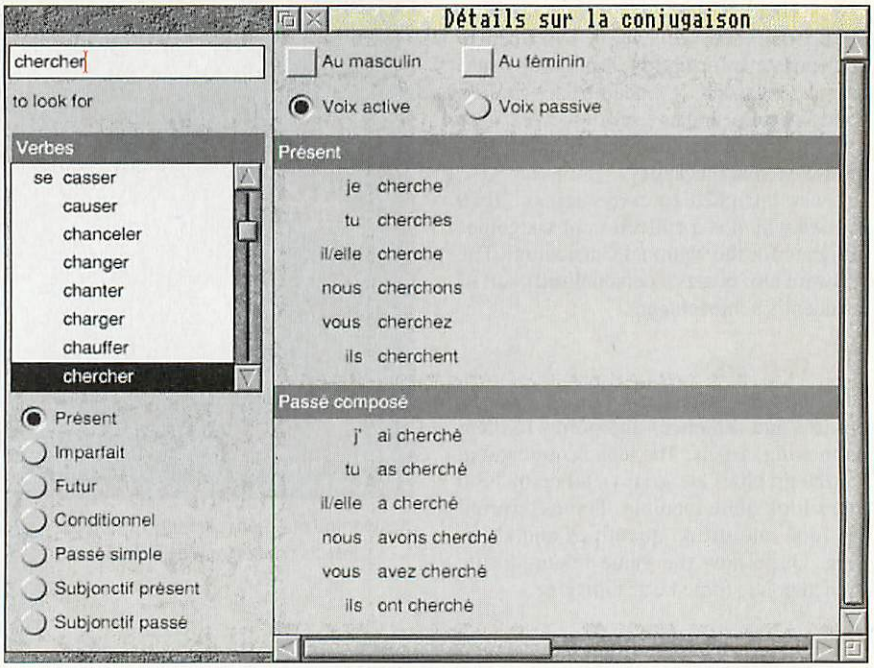
Cons: Doesn't teach children much of relevance • Over priced • Bears little or no relation to the National Curriculum • Far too many errors

Conjugal writer

Rebekah Gall uses Creative Curriculum Software's latest package to conjugate a few verbs in French.

Conjuguez! was released in the presentation at the beginning of 1994 as a 'unique software tool, essential for all those involved in teaching French. It is a reinforcement or revision tool which takes the form of a test. It is also a reference tool with 3500 verbs and their conjugations for all levels.'

At first the presentation seemed dull, but after sitting down with a cup of coffee to try it, I was pleasantly surprised when I noticed that two hours had passed and my coffee was cold. *Conjuguez!* is quietly addictive; once you've demonstrated your competence in the pluperfect tense, you itch to move on to the conditional.



There is a huge amount of information available.

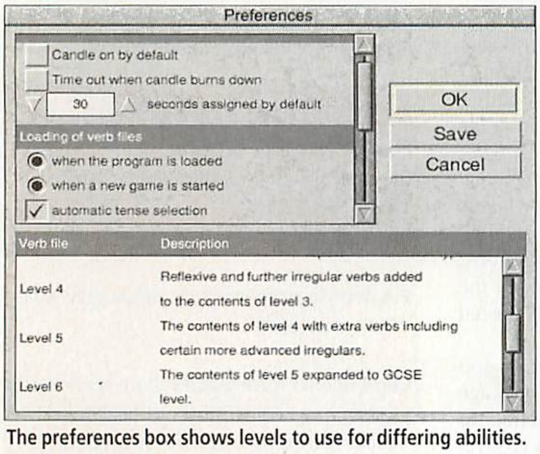
Lots of tenses

Conjuguez! is a simple testing game supported by a huge amount of reference material. Firstly, the player can select tense and mood; there are 28 tenses to choose from, such as present active and pluperfect subjunctive passive.

Next, the verbs must be selected. The player can choose all verbs, *avoir* verbs, *être* verbs or reflexives. In addition, the general parameters should be selected from one of the nine graded verb files supplied. These descriptions move from the verbs *avoir* and *être* and a few regular *-er* verbs (Level 1) through Extended GCSE vocabulary (Level 7) to 3500 verbs for A-level candidates (Level 9).

The scoring system can also be altered, as can the time allocated for each attempt. To play the game, just conjugate the verb displayed on the screen in the time given; if the answer given is wrong, the player can try again, view the correct answer or use the reference information to investigate the verb or tense in question.

It's a simple but effective idea. I was particularly pleased to see that all the instructions are in French, and at 186 pages, the reference section is lengthy and detailed. Not only are the tenses covered, but there are also sections on auxiliaries, agreement, inversion, imperative, interrogative, negative, direct and indirect objects.



The preferences box shows levels to use for differing abilities.

I enjoyed '*Comment M. Major est-il devenu premier ministre?*' but I am afraid that I had difficulty reading the anti-aliased text on screen – it is too small and requires a high resolution monitor for ease of use, and many verb endings are quite unclear. I was amused to note the inclusion of Montaigne's words '*Un beau livre est le meilleur compagnon que j'aie trouvé dans cet humain voyage*', and felt that a good text book would be more legible.

Conclusion

CCS reported that *Conjuguez!* has been purchased by schools with networks as a basic reference tool, but it has also been popular with adults who are keen to brush up their French. I don't think that this program will encourage fluency in conversational French, but I will certainly install it on my school network, as it can be used at so many different levels. The focus on grammar without context is, however, not in keeping with the aims of the National Curriculum and for this reason I will be limiting the program's use to GCSE and A-level classes only. Don't rely upon this material as a teaching tool; it is far better used for revision of points already covered in class.

I would also recommend the program for adult learners and students following condensed courses, as well as teachers who suddenly find they need to brush up on their French. The German version is due at the beginning of 1995; if it's as good as the French I will be first in the queue for a copy. AU

Product details

Product: Conjuguez!
Supplier: Creative Curriculum Software
Tel: (01422) 340524
Price: £29.95 inc VAT (Home user)
£25.49 + VAT (Education)
£89 + VAT (Primary/Secondary Licence)

Pros: Valuable reference material • Large amounts of information • Comprehensive

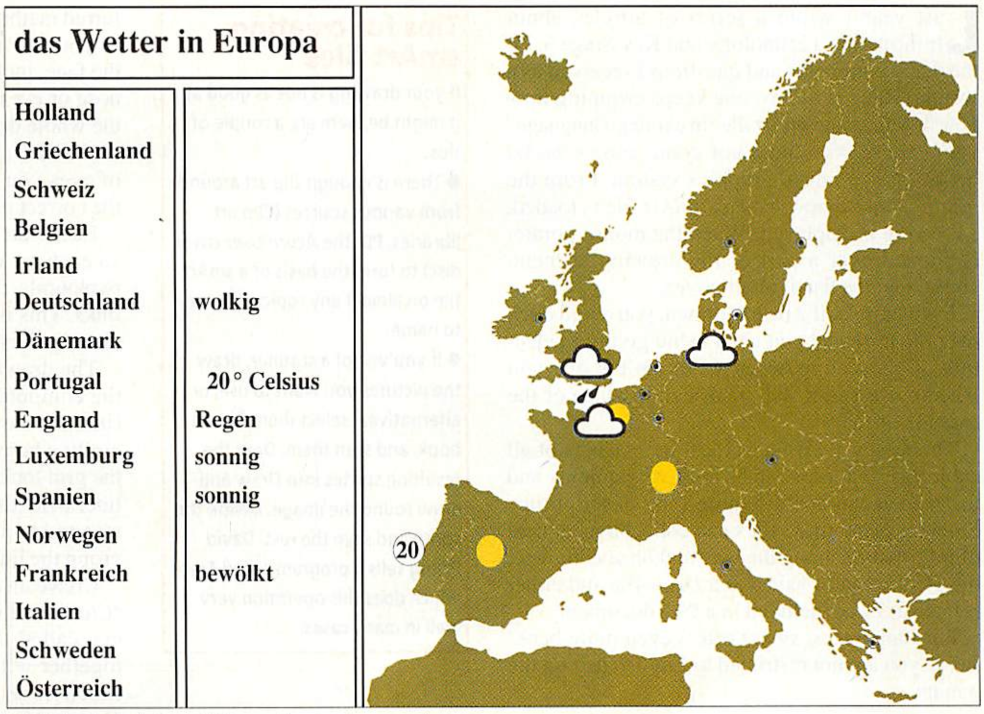
Cons: Not a teaching tool • Presentation sometimes dull • Multisync monitor an advantage

Easy talk

Judy Clements looks at some different ways to deliver Languages using IT.

Picture this scene – every student is fully focussed on their work. There is a buzz around the classroom, arising from a genuine excitement and interest in the task. The teacher assists but the flow of the lesson is led by the pupils. Of course, this is the kind of scenario we all strive for as teachers, but sometimes it can seem utopian when we're confronted by a class of 13-year-olds in full swing. With computers in the classroom it can be a reality.

Using Information Technology in the Modern Languages classroom is like waving the proverbial carrot in front of the class. It's not often you have to drag a teenager screaming to sit in front of a computer screen. Our children are virtually computer literate by the time they come to Secondary School. Many have computers at home and don't share the concerns that many of us adults might have felt when first confronted by all those confusing function keys.



The rain in Spain falls mainly over England, as usual.

The Modern Language software need not cost a fortune. Most of the material we use is non-subject specific and already exists in the school. We adapt that generic software to meet our own specific subject requirements. Pupils have already experienced word-processing packages such as *Impression Publisher* in their other subjects and feel equally at home with *Draw* and *smArt*. Using them in a different language is just another challenge. Here are two topics we cover using Information Technology as either the starting point or as reinforcement.

Weather

The French version of the *smArt* file *Euro-Weather* appeared on the February 1994 *Acorn User* cover disc while the German version is on the 1994 *Acorn User* Education disc.

This is an ideal medium for reinforcing weather phrases, as well as bringing in some geographical skills. One way of using it is to read out the weather forecast for Europe while the students select the weather symbols for the correct cities. It's often necessary to read the forecast several times so that they are able to take in and process all the information.

Once the map is completely labelled, they need to transfer the information across to the chart on the left-hand side. Michael Fish would shudder at the strange weather combinations I've had happening in Europe at the same time, but the pupils have great fun at pointing out the anomoly of having snow in Madrid and brilliant sunshine in Oslo.

Directions

The program *smArt* is supplied with some demonstration files, including one called *Roadway*. Creating a roadway is rather like designing a Scalextric layout on the computer and can be used to create a little town, complete with roundabouts, T-junctions and bridges. Having created the map and saved it as a *Draw* file it is then flipped by setting the x scale to -1. This is because the road is a left-hand drive, and flipping it produces a right-hand drive version. Various features can then be added like a bank, a hotel, restaurant etc. I then give the students the finished map and they use it as a sort of reference in conjunction with *Linguatext*, the only program we currently use which is specifically aimed at language teaching.

Take a text file and convert it into *Linguatext* format with the supplied converter. *Linguatext* can then be used to create up to ten different problems using the text. For example it will create a cloze passage where you have to type in the missing words.

On screen, the students have the *Linguatext* passage which appears as a series of dashes, and the *Draw* file of the map which has all of the places mentioned in the text. The aim is to fill in the dashes, using deduction, a knowledge of the topic-specific vocabulary and some common sense.

There are a number of different problems in *Linguatext* including some missing words, all words missing and first letter only visible. This means that using the same text, students can select a problem appropriate to their ability and once the first task has been completed, there's plenty more reinforcement activities to choose from. AU

Product details

Product: Linguatext
Supplier: Hampshire Microtechnology Centre
Tel: (01705) 378266
Price: £55

Product: smArt
Supplier: 4Mation
Tel: (01271) 25353
Price: £55 (includes site licence)

Tricks

Geoff Preston, one of the original team of smArtists, shows some tricks to create foreign language smArt files.

Last year I wrote a series of articles about Information Technology and Key Stage 3. Of the many comments and questions I received as a result of those articles, one keeps cropping up – how do you create *smArt* files in a foreign language?

For those who have not come across *smArt* before, it is a linked graphics system. From the user's point of view, when a *smArt* file is loaded, a drawing is displayed. When the mouse pointer is clicked over a part of the drawing, a menu appears with a list of alternatives.

For example, if a face is drawn, you could click over the nose and you get a menu giving a selection of alternative noses. Click on the one you wish to use and it will be drawn in place of the existing one.

The reason *smArt* is so ideal for teachers of all subjects is that files can be built very quickly and the menus can contain quite long descriptions. Students using these files can collect a great deal of information along the way and once complete, the picture can be saved as a *Draw* file and either printed as is, or included in a DTP document.

For Languages, *smArt* offers even more benefits as you are not restricted to English text on the menus.

How to start

Before you create anything in *smArt*, you must first create a series of drawings. These must be saved as *Draw* files, but may contain sprites (although too many sprites will lead to large files which will take a long time to load). The drawings also need to be saved inside a directory structure, the names of which will be very important.

For the purposes of this demonstration, I'm going to outline the stages required to create a *smArt* file of a clown's face. When you click on his nose, you'll get a choice of different noses in French, click on his eyes and you'll get a choice of eyes in German.

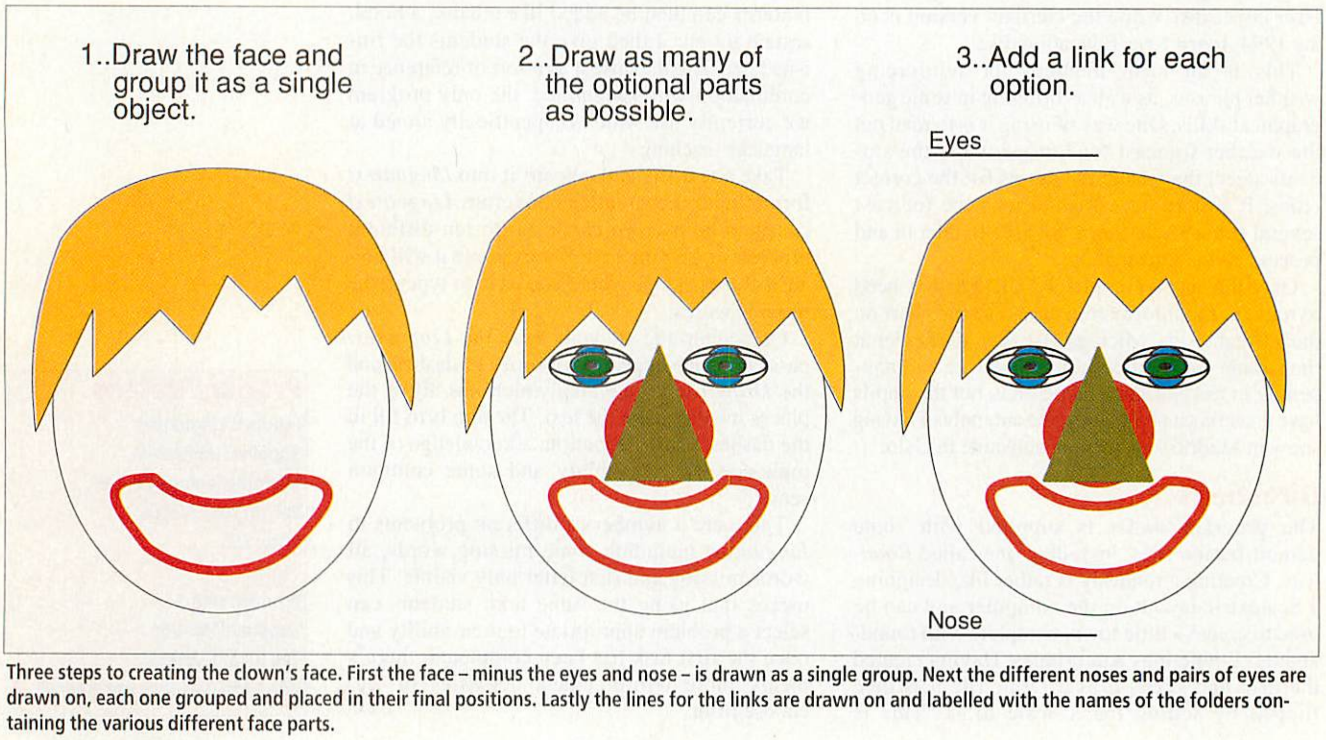
There are several ways of starting your drawing, and after a while you'll find your own preferred method, but I find it's best to draw as much as you can in one drawing. To begin with, draw the face, including the mouth and hair but not the nose or eyes as these are selectable parts. Group the whole drawing together (Ctrl-A then Ctrl-G). Now draw all the different noses and all the sets of eyes you wish to include and drag them into the correct place on the clown's face.

Each part must be one single grouped object, so each set of eyes is one grouping made up of two pupils, two iris and two outlines. Now do the links. This is the part that most people find hardest to understand.

The drawing must contain information to tell the computer where to get the component parts (in this case the noses and sets of eyes) and precisely where to place them on the drawing. With the grid lock on, draw a line about 3 cms. On the line, write the word 'Nose' (which will later correspond to a directory folder called *Nose*). Now group the line and the word. Repeat for 'Eyes'.

Create an application directory structure called *!Clown* and within that create two directory folders called *Nose* and *Eyes*. Save each nose, together with a link line for each, in the folder called *Nose*, the eyes with a link line in the folder *Eyes* and finally the face with the two link lines in

> ### Tips for creating smArt files
>
> If your drawing is not as good as it might be, here are a couple of tips.
>
> - There is enough clip art around from various sources (Clip art libraries, PD, the *Acorn User* cover disc) to form the basis of a *smArt* file on almost any topic you care to name.
> - If you've got a scanner, draw the pictures you want to use, or alternatively select them from a book, and scan them. Drag the resulting sprites into *Draw* and draw round the image. Delete the sprite and save the rest. David Pilling sells a program called *Trace* which does this operation very well in many cases.



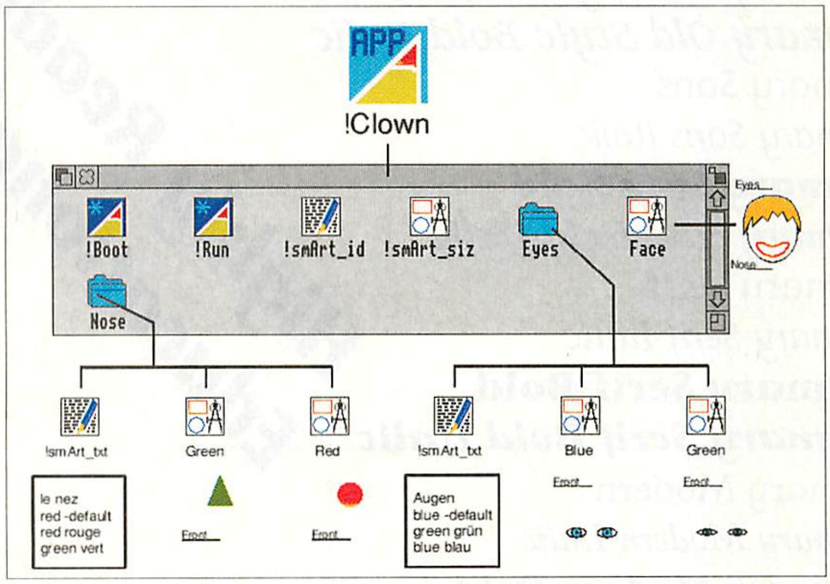
Three steps to creating the clown's face. First the face – minus the eyes and nose – is drawn as a single group. Next the different noses and pairs of eyes are drawn on, each one grouped and placed in their final positions. Lastly the lines for the links are drawn on and labelled with the names of the folders containing the various different face parts.

the root of the application folder.

The links within both eyes and both noses now need to be changed so they all contain the word 'Front' instead of the previous word which was either 'Nose' or 'Eyes'. The word 'Front' should be grouped with the link line but not with the actual drawing. This method ensures the link line on the face will exactly match the corresponding link lines in the eyes and nose drawings.

Inside the *Eyes* and *Nose* folder there should now be a text file which will determine the contents of the menus. The first line must be left blank and the second line may contain a word or phrase which will appear in grey at the top of the menu. If this is left blank the title of the menu will be taken from the directory name – in this case either Nose or Eyes. The Language teacher will probably enter the name of the part in the target language.

The third line determines which of the options are used when the file is first drawn. The rest of the lines refer to the name of each drawing within the folder followed by a space and then the name you wish to appear in the menu. So, in the case of the nose, the first line is blank, the second line is '*le nez*' (the French for nose), the third line is 'red-default' because I want the clown to be drawn initially with a red nose, the fourth line is 'Red *Rouge*' because I want the top item on the menu to refer to the red nose and I want the name to appear in French; *Rouge*. This textfile is saved as *!smArt_txt*.



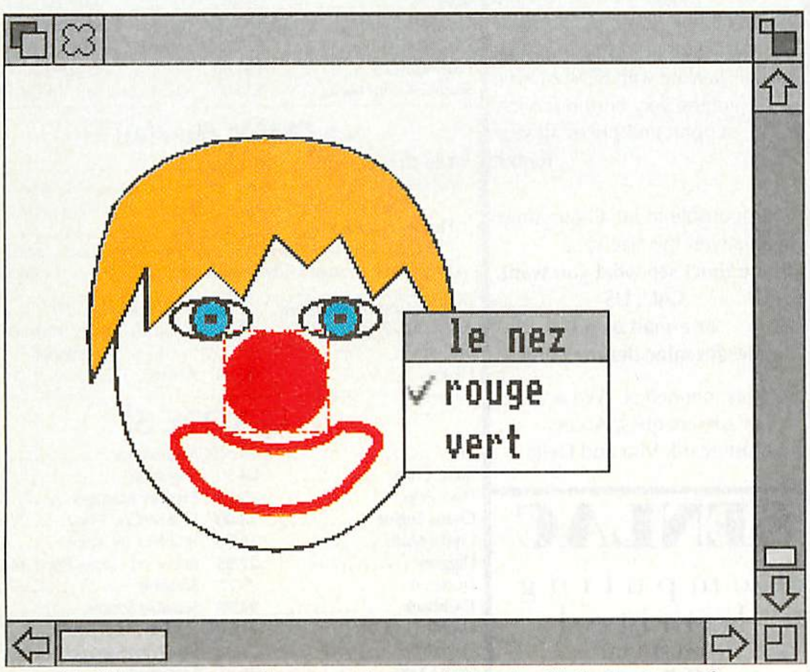
The source directory should have the hierarchical structure shown above, which is identical to the example on this month's cover disc. The noses and eyes are in two separate directories containing the different versions of both, along with a short text file which describes the menu.

In the root of the *!Clown* directory should be a *Draw* file called *!smArt_siz* which will contain a rectangle just large enough to contain the drawing of the face. The rectangle will determine the size of the window when the *smArt* file is opened. The remaining items in the root folder can be taken from the *smArtFiler* disc.

The application *smArtFiler* from 4Mation is sold separately to the main application *smArt* and is used to compile the drawings into a single *smArt* file.

To use *smArtFiler*, load it and drag the directory (in this case *!Clown*) into the application icon on the icon bar. A save box appears and the icon is dragged into a suitable filer window.

of the trade



It works! Click on the nose and up comes the menu in French, with the two types of nose available. Similarly, clicking on the eyes will bring up a German menu with entries for green and blue eyes.

Common problems

The resulting file is ready for use, but if it compiles first time without errors, it'll be a miracle. The most likely compiling errors will be because:

- The drawing has not been grouped as a single object (select all parts of the drawing, but not the link lines, and press Ctrl-G)
- The link line and its associated word are not grouped (select the link lines and associated word and press Ctrl-G)
- The drawing is in front of the link lines (select the drawing and press Ctrl-B to put it to the back)
- The name on a link line does not correspond to a directory name (e.g. the link is called Nose and the folder is called *Noses*)
- Finally, despite constant checking and rechecking, misspelt words (especially foreign words) always seem to slip by.

This is a very simple example and *smArt* is capable of controlling more complex files in many different ways. But, if you want to start creating some *smArt* files, start small.

The source file described here is on the cover disc together with the compiled object file. A good start might be to alter or extend this. To further whet your appetite, some *smArt* files are on the education disc which is supplied with *Acorn User* subscriptions. AU

Primary Old Style
Primary Old Style Italic readable
Primary Old Style Bold
Primary Old Style Bold Italic
Primary Sans
Primary Sans Italic
Primary Sans Bold
Primary Sans Bold Italic
Primary Serif
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REVIEW

In brief

Under scrutiny this month:
InfoZip • TableMate 2 • Softcrete • MultiGen Genlock • KeyStroke 3

Infocom adventures on the Pocket Book/Series 3

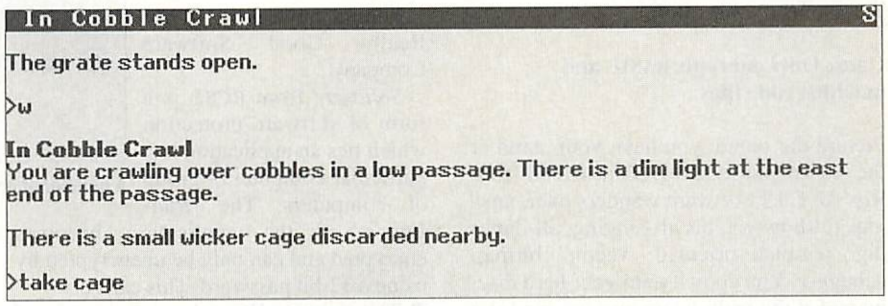
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Supplier: Interdata Developments
Tel: 0161-792 2871
Fax: 0161-792 2114
E-mail: lace@cix.compulink.co.uk
Price: £24.95 inc VAT

Pros: Brings text adventures to the Pocket Book • Runs the adventures available for the PC • Cheat application

Cons: Slightly slow • Manual poor for beginners • Addictive

Call me old fashioned, but there is something special about plain old text adventures. It's a bit like photography; colour is all very well, but black and white has a special quality all of its own. It never even occurred to me that some of the all-time classic text adventure games from Infocom would ever fit inside a humble Psion Series 3 or Acorn Pocket Book, but now they do, courtesy of *InfoZip*, marketed by Interdata Developments in Salford.

InfoZip is a run-time adventure interpreter application which enables a wide range of classic Infocom text adventures from *Colossal Cave* to *Zork* and more to be played on a Series 3 or Pocket Book that have at least 256K memory fitted. The idea is that you copy the adventure data files from original Infocom PC discs to your



Colossal Cave, in a not-so colossal computer.

organiser, which then runs them using the *InfoZip* application. Interdata Developments supplies Infocom adventure packs from Activision and bundles *InfoZip* for Series 3 customers.

Infocom adventures don't require very up-to-date PC hardware, so you have the option of running them on the Acorn *PC Soft* emulator or a PC card as well as your organiser. *InfoZip* can be purchased on its own for £24.95 inc VAT, but even then it comes with a couple of free adventures, one of the original Fortran mainframe classics from 1977, *Adventure*, plus a new and very challenging adventure called *Curses*.

Supplied documentation is in the form of a 20 page booklet. It's good at trouble-shooting when you're up and running, but I'd like to see more help to get you going in the first place. There is no Acorn-specific help so, for example, crucial advice on the pitfalls of copying PC files using *PocketFS 1* is absent. For the record, you need to delete the original file's three letter extension and reinsert it once it has been copied. Better still, get *PocketFS 2*.

Once installed successfully, *InfoZip* really works quite well, though command responses can be a bit slow. You can save games and there is a cheat application, *InfoStat*, for dumping all the keywords, treasure and adventure locations, should you need it. Also supplied is a PC archive of interesting facts about the various Infocom adventures available.

InfoZip was originally shareware but now, for £39.95 inc VAT you can get *InfoZip* plus 20 games contained in *The Lost Treasures of Infocom* which represents very good value for money.

Since getting hold of *InfoZip*, *Mine Hunter* has definitely had to take a back seat on my Series 3a.

Ian Burley

TableMate 2

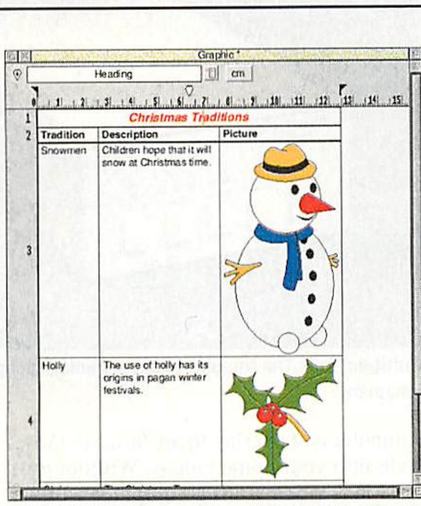
Product: TableMate 2
Supplier: Dalriada Data Technology
Tel: (01926) 53901
Price: £32.50 inc VAT (£17.50 inc VAT to *Style* and *Publisher* owners)

Pros: *Draw* file support • Colour support • Word wrapping

Cons: No interacive help • Original *TableMate* comes free with *Impression* • Few key short cuts

When Computer Concepts released *Impression Style* a year ago, it was bundled with two other utilities: *Equasor* and *TableMate*. Given my experiences with *Equasor*, I was not expecting *TableMate* to be especially useful. How wrong I was.

TableMate is a great little table-making package, albeit a fairly basic one. Now Dalriada has released *TableMate 2* which boasts a number of improved features. Like the original *TableMate*, it hotlinks with



TableMate 2 brings colour and *Draw* file support.

Impression using OLE, although it will export text in DDF and *Draw* format for use with older versions of *Impression* and other DTP/page layout packages.

TableMate 2 is not a spreadsheet, but most of the design options that a spreadsheet like *Resultz* has are present here. The widths of columns can be altered, and multi-column cells can be created. The appearence of rows is style-based, although the actual mechanism of changing the thickness of a horizontal line is different than for a vertical line, which takes some getting used to. This is true of the program in general; it doesn't manage to be as intuitive as it might be, but thankfully the manual is clear and instructive.

Users of *TableMate* will be wondering whether it is worth upgrading to *TableMate 2*. For me, the big bonus was *Draw* file support; cells in the table can contain *Draw* files, which can brighten a table up no end. In a similar vein, text, cells and lines can now be coloured.

If you use *TableMate* regularly, I would advise you to upgrade at once to *TableMate 2*. If you are still struggling with the *Impression* rule-off and tab system to make your tables, switch to *TableMate* now. You'll find it so much easier.

David Matthewman

Softcrete

Product: Softcrete
Supplier: The Really Good Software Company
Tel: (01582) 761395
Price: £24.95 inc VAT

Pros: Hinders software piracy • Transparent operation

Cons: Only encrypts BASIC and machine code files

Picture the scene: you have your stand at the Acorn World show. Your friend from Risc-U-Take Software wanders over, anxious to show you his all-singing, all-dancing template-oriented vector bitmap debugger. You copy it onto your hard disc, marvel at the realtime texture-tracing for a while, and then wander off to try to find the show organisers and ask why your show entry was printed in Arabic.

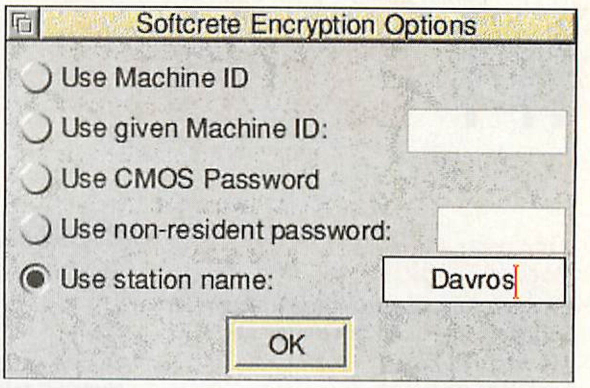
On returning to your stand you notice a couple of very earnest young faces sitting at your computer. As you approach, one of them gets up and engages you in enthusiastic conversation about the products on your stand.

As you debate the finer points of network cycle times with him, you could swear that you see the other one slip a disc from your floppy drive into his pocket, but it seems a bit harsh to challenge him there and then. The next day, you notice a crowd of earnest young faces talking to a rather ruffled looking programmer from the Risc-U-Take software team. You observe that rather a lot of them are carrying floppy discs, and that the programmer seems a bit upset by this. Your friend from Risc-U-Take software wanders over, anxious to show your hard drive a large hammer.

Should have gone to the Really Good Software Company...

Softcrete from RGSC is a form of software protection which ties an application to a particular computer or group of computers. The *!RunImage* of the application becomes encrypted and can only be unencrypted by using a 32-bit password. This can be:

- The machine ID of the computer, or of another computer. A5000s and later machines have unique serial numbers built in which can be read by software.
- A password built in to CMOS. This enables the software to be run on a number of machines which all have this password. Strictly speaking, this is slightly naughty as software is not meant to change CMOS RAM like this, but provided you do not run UNIX as well, you should not run into problems.
- A password resident in RAM. A second program, catchily named *SCreteNRP* is provided for this purpose. You type a password at it and it keeps the password in memory for a specified period of time. During this period, you can run protected applications, afterwards, you can't.



A number of encryption options are available.

The protection methods are independent, so you can't use an application encoded for a particular machine on another just by giving it the correct password. The encryption is also one-way – you can't recover an application once you have encrypted it – so always keep backups locked well away.

This will be very useful to anyone vulnerable to software piracy; firms with large amounts of software on their company machines, for instance.

However, it only protects programs, as *SoftCrete* will only encrypt BASIC and machine code files, and does not currently cope with BASIC libraries very well. As a deterrent to the casual software pirate, who thinks 'I'll just take a copy of that...' it is ideal. The determined hacker may be able to find a way round the protection, but then determined hackers usually will, whatever you do.

David Matthewman

MultiGen Genlock Adaptor

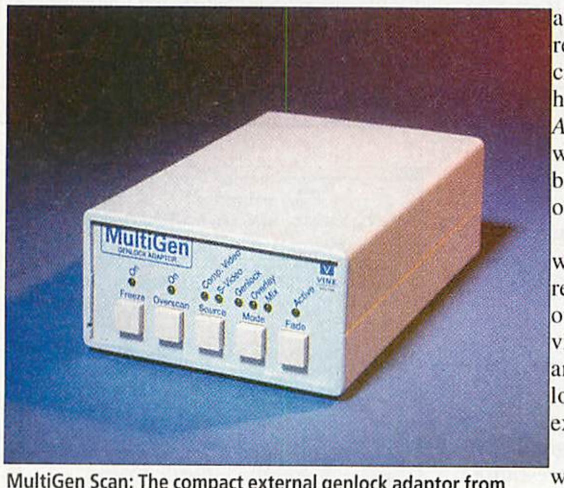
Product: MultiGen Genlock adaptor
Supplier: Sonamara Computer Supplies
Tel: (01626) 873763
Price: £355 + VAT

Pros: Allows Archimedes output to be input to a video and mixed with existing signal • Excellent picture quality • External unit

Cons: Expensive

The principle that the MultiGen Genlock adaptor works on is simple. Into the back of the adaptor you feed the RGB signal from your computer. *Acorn User* readers will want to use their Archimedes, but the MultiGen isn't fussed and, being an external unit separate from the computer, will take input from a BBC Micro, Macintosh, Atari or anything that produces an RGB signal. You also feed in the signal from a video source – composite or S-Video – and the MultiGen will overlay them, display one or the other, or fade between them.

When overlaying the pictures, the MultiGen will allow the video signal to show through below a certain threshold level; this level is adjustable. This means that you can design animations on the computer and overlay them *Jurassic Park*-style into your home videos. Without professional video editing equipment, this a hard effect to achieve in practice – domestic video recorders just don't have the timing accuracy – but the MultiGen is one of the stronger links in the chain.



MultiGen Scan: The compact external genlock adaptor from Sonamara.

A less demanding task is that of creating titles, at which the MultiGen excels. Although it does not actually anti-alias text edges as one future Archimedes genlock adaptor is rumoured to do, the resolution is good enough for a crisp display. Its educational uses have already been mentioned in *Acorn User*, but the MultiGen would be an excellent tool for businesses making promotional or training videos.

The MultiGen has few bells and whistles, but then it doesn't really need them. It does the job of combining computer and video signals very well, and to do anything more fancy, you are looking at considerably more expensive hardware.

I had originally written that it would be nice to see the MultiGen bundled with some titling software, but then a press release from Sonamara landed on my desk announcing the Sonamara 'Video Maker' pack.

This bundles the MultiGen with *Titler* from Clares, along with the latest edition of *Computer Video Made Easy*, at an introductory price of £365 + VAT. Even at this price, the MultiGen is emphatically not a toy, but it *is* a fine piece of hardware, compact and simple to use.

David Matthewman

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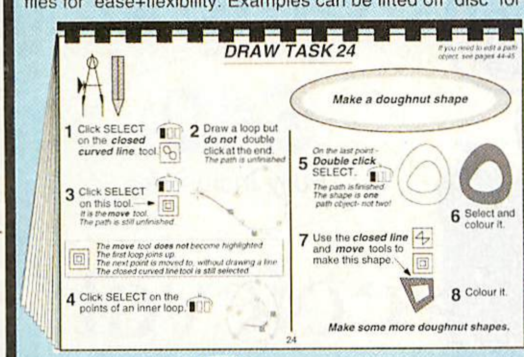
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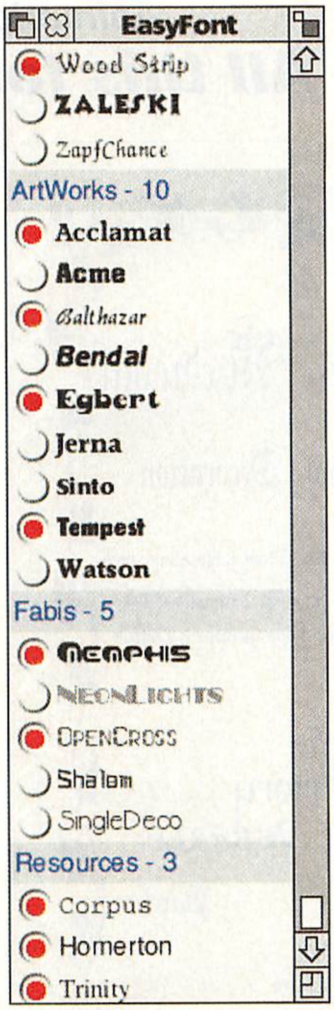
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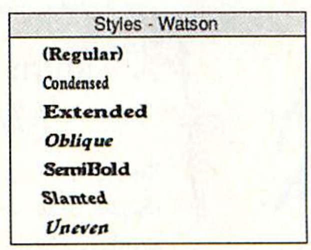
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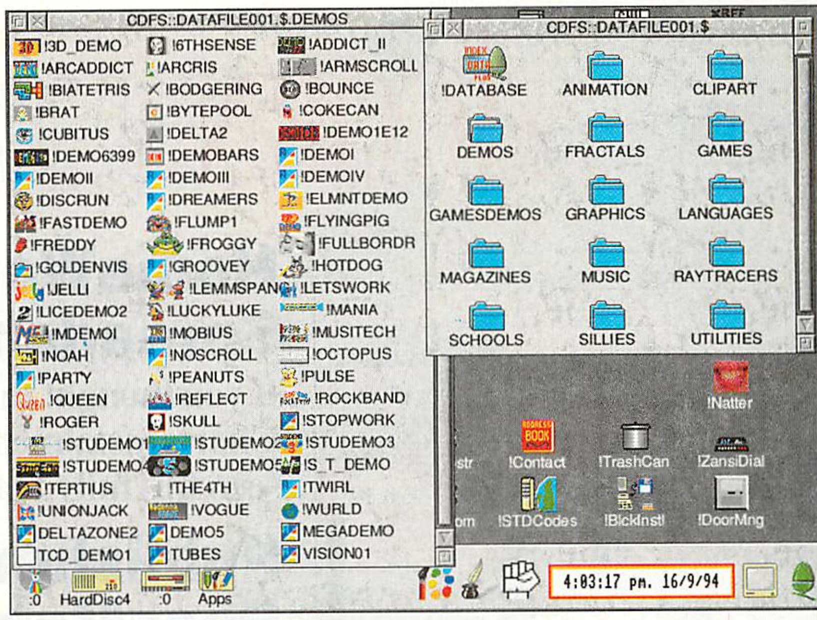
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Acronym overload

Chris Jackson looks at the PD CD-ROM from The Datafile.



The disc is organised in directories, with each directory containing a number of applications. In some cases this number can be quite large, as in the case of the *Demos* directory, which took 45 seconds to open as the Filer booted all the applications.

Back in the 'old-days' of computing, when the BBC B was *the* computer, storage was on tape, or if you were really lucky, on 5.25in discs with the maximum storage capacity of about 360K. Nowadays this has all changed. CDs and Optical disks are commonplace, 600Mb is seen as average, and the age of the 1Gb drive as standard is approaching fast.

The first project which CD-Circle, the club I looked at in the November Club Corner, has put its efforts into is what is known in the PC market as *shovelware*. With the help of The Datafile, the largest PD library in the Archimedes market, it has put together a CD-ROM with over 250Mb of public domain software.

The disc is well presented in a proper CD case instead of a plastic wallet, but the addition of a side strip with the name on would have been nice so you can tell which disc it is when digging it out to find some PD game or other.

After clicking on the CD-ROM icon, a few seconds later the Filer window pops up showing the various sub-directories filled with applications and files, and a database of the contents of the disc. If you load up the database, which looks very much like the database used on The Datafile's catalogue disc, you are presented with a large window with a massive list of files and applications that can be found on the disc.

The search facility is adequate, but every time I clicked on the 'Next' icon, the window scurried away across the desktop. The odd spelling mistake in the text did slip through the net, but this is forgivable, as there is almost 153K.

One gripe that I did uncover while using the database was the absence of any way to open a directory viewer on the application using the database – you have to search through the disc's directory structure to find it.

Slow access

The layout of the disc is quite easy to use. In the root is a total of 14 sub-directories, and many had further sub-directories. At first I thought this might hinder the use of the disc, but once I tried to go into the *Demos* sub-directory, which took a staggering 45 seconds to display the filer window, I decided that more directories should have been used to speed up access.

One nice feature employed throughout the disc, which brightens it up no end, is the use of application directories, which when double-clicked upon open a sub-directory, so instead of using the boring old RISC OS sprite, icons depicting the contents are shown. High-res sprites are in there, which multisync users will be glad of.

Music is also very well catered for; there are well over 300 tunes on the disc, totalling over 30Mb, most in *Digital Symphony* format. Players for probably all types of music on the Archimedes, and various tools to extract data from the tunes can also be found.

There are a few applications on the disc that are aimed at education, but the size of the whole directory is less than the size of the *Sillies* directory. Schools will be able to use various applications on the disc, like the *POV* raytracer and the *For Your Eyes Only* drawing package.

Users of Risc PCs should note that almost all the demos, and some of the applications, won't work on their machines. I plugged the CD-ROM into my A3000 to test the applications that didn't work on my Risc PC, and they worked fine.

Product details

Product: PD CD-ROM
Supplier: The Datafile
Tel: (01934) 823005
Price: £30 inc VAT (£25 inc VAT to registered Datafile users)

Pros: Oodles of software • Good value for money • Easy to use

Cons: Non-interactive database • Some dubious JPEGs • Access time can be a little slow

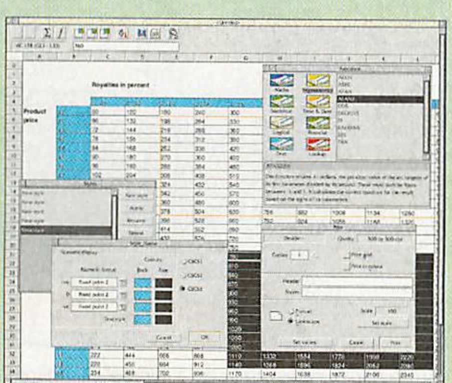
Conclusion

In my opinion, Archimedes users with a CD-ROM drive should own this CD. Access to over 250Mb of PD cannot be snubbed at, especially at £30, but a handful of pictures on this disc let it down an awful lot, and were probably put on to boost sales slightly – but will probably make sales less.

Schools and colleges would benefit from the masses of clip art on the disc, but the 'dodgy-GIFs' on the disc make it hard for schools to justify the space on their servers .

There is a distinct possibility that The Datafile will produce more PD-CDs in the future; personally, I can't wait! AU

NEXT MONTH IN ACORN USER



HomeWorks Part 3: Spreadsheet

If you thought the *HomeWorks* Graphs and Charts instalment was good, wait until you've seen this fully-featured spreadsheet in action.

Publisher vs Quark vs PageMaker

The latest version of *Impression Publisher* might be the best thing on the Acorn, but how does it perform against the packages on the Mac and PC platform?

Special needs

Acorns are extremely well-suited to computing for special needs, as our four-page round-up shows.

Flashback diary

The concluding part of Dave Lawrence's diary of the writing of *Flashback*.

ProArtisan 24

The 8-bit version was our graphics release of the year last year, but can the 24-bit version of *ProArtisan* steal the limelight from *Photodesk*, *DA's Picture* et al?

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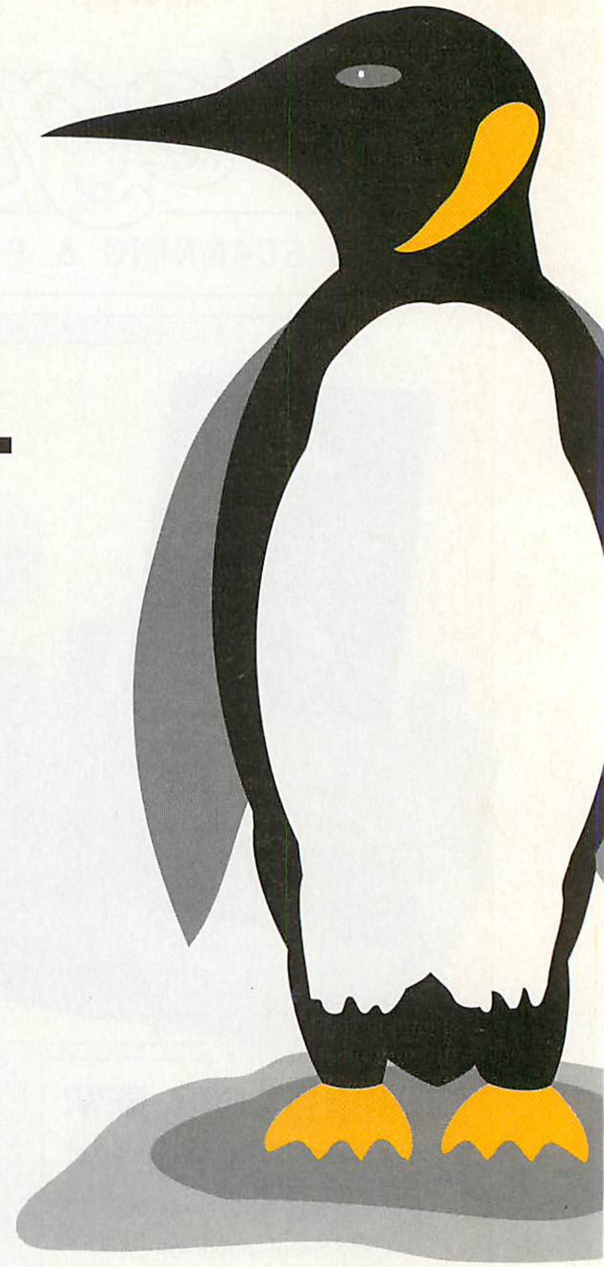
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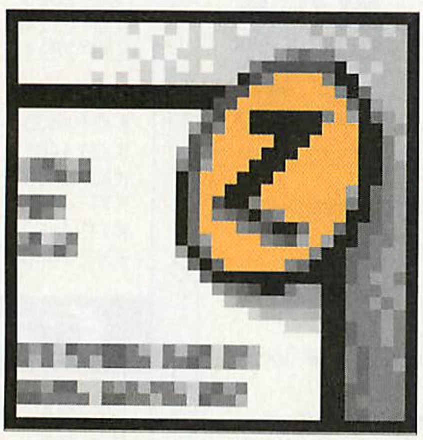


In the latest in the series on software developers, David Matthewman talks to Mark Colton about writing software for the Z88, Archimedes and IBM PC.

Mark Colton's association with the Acorn platform is a long one, going back to 1982 when he first wrote the full-screen editor *View* for the BBC micro. *View* spawned a spreadsheet – *ViewSheet* – and a database – *ViewStore* – before the then very radical decision was taken to combine them in an integrated package called *Pipedream*.

'Well, that's what I wanted to call it', says Mark, 'but Acornsoft decided on *View Professional* to keep the link with the rest of the family. Then along came the Z88, for which the developers wanted an integrated package, and *Pipedream* was back.'

Work on the Z88 version started in August '86. 'I took the 6502 code and re-wrote it in Z80 assembler, originally using a Z80 co-processor. Paul Bond was the most important architect of the operating system on the Z88 – he got the whole thing going – but we all ended up working on it when I'd finished *Pipedream*. It was astounding what we did when you look back on it. The whole operating system was crammed into bank-switched memory, but it all worked.'



Short-cuts

The keyboard short-cuts on *Pipedream* are unique in the Acorn world. For example, to save a file you don't type F3 or even Ctrl-F3, but Ctrl-F followed by Ctrl-S. I asked Mark why that was.

'We needed to set up a standard set of control codes for *Pipedream* on the Z88, and we took as a basis the *WordStar* single key codes and Microsoft *Quick C* multiple key codes.

'The letters were a quick way of navigating a menu structure based on a menu bar across the top of the screen.

'When we came to *Pipedream* on the Archimedes – and the PC for that matter – we wanted to keep the same set of codes, so people could switch easily between the different versions and still feel that they were using the same program. Besides, at the time there was no accepted standard.

'Since then, of course, a totally different set of codes has become "standard" on the Archimedes. Nonetheless, when we made a conscious decision with *Fireworkz* to drop the old control codes, we got a lot of flak from people who wanted them back.'

Programming language

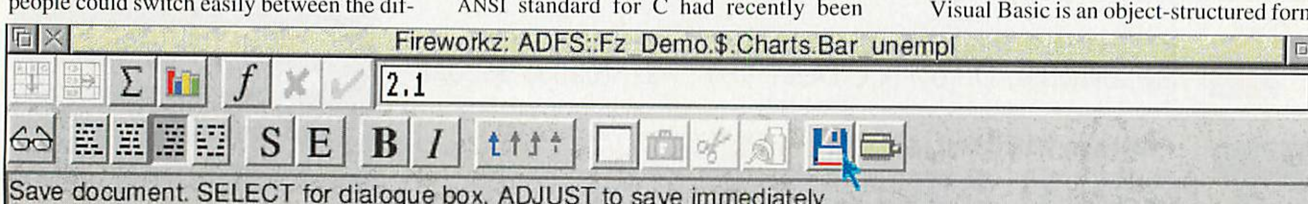
On the Z88 and the BBC micro, the program was written in assembly language. However, when it came to the Archimedes, *Pipedream* was re-written in C, rather than ARM code.

'Assembly language is most satisfying to work with,' admits Mark 'but you can be more productive in C. This wasn't the only reason, though. If *Pipedream* had been written in ARM code, then we would have needed another version for the PC, a market we were trying to break into. Crucially, the ANSI standard for C had recently been agreed, and there was an ANSI standard C compiler on both platforms.

'At Colton we have now evolved a style and technique of programming with which we are happy. The whole of *Fireworkz* is properly object-structured, which means that it will be straightforward to translate into another structured language like C++.

'Over the next few years it will become less possible for firms like us to use a relatively unproductive language like C in preference to – for instance – Visual Basic. We won't be writing spreadsheets either; we'll be writing a totally different style of program. I expect spreadsheets, word processors and so on to be provided as part of the operating system in the future.'

Visual Basic is an object-structured form



The status bar on *Fireworkz*. Mark Colton feels that it is important not to follow a traditional design just because it is traditional. The status line is a good example: Microsoft *Excel* has one, but it is at the bottom of the window. 'You are constantly flicking your eye between what you are doing on the tool bar and what the status line reads', Mark explains. 'I'm amazed that they didn't do the user interface better.'

of Basic which allows the programmer to design a user-interface visually and then to build an even-driven program around it. Visual Basic exists in DOS and Windows forms, but not on the Archimedes.

'The breadth of programming tools keeps getting better, but the Acorn is just at a standstill,' asserts Mark. 'The fact that they even had a decent C compiler in the first place was basically a stroke of luck. At no time did Acorn say "We need a C compiler." These two computer scientists at Cambridge – Norman and Mycroft – wrote *Norcroft C* for the university mainframe and offered it to Acorn. Suddenly Acorn had a very good C compiler.

'At a developers' meeting Malcolm Bird asked us if we thought that a C++ compiler was important. I said "Not yet, but in a few years' time." Well, it is a few years on now and we haven't even got a C toolbox, let alone a C++ class library.

'Without a development environment like Visual Basic for the Archimedes, people won't want to write software for the machine any more. Acorn has survived on its niche Education market, but that's only there because the software is there.

'I'm not saying that I like Windows. Using Windows is horrendous compared to using RISC OS. The filing system is appalling. Every single application has its own file dialogue box. I give Windows nought out of ten, and RISC OS eight or nine. From the user's point of view, RISC OS is way ahead.

'However, from the point of view of doing programming, Windows is streets ahead in terms of help systems, a C++ compiler, documentation, the list goes on. RISC OS has a good C compiler, the debugger's OK, and *Edit's* not bad for editing source files. But the integration between Visual C++ and the debugger is much better than anything on RISC OS.

'Of course it would be *possible* for a third party to produce the required programming tools, but where's the incentive? It would be impossible for any third party to make any *money* out of producing tools for developers. If the market for Acorn computers is small, the market for Acorn software developers' tools is minute. It is Acorn's responsibility as a promoter of its technology to provide the required tools to write Acorn software.'

Design considerations

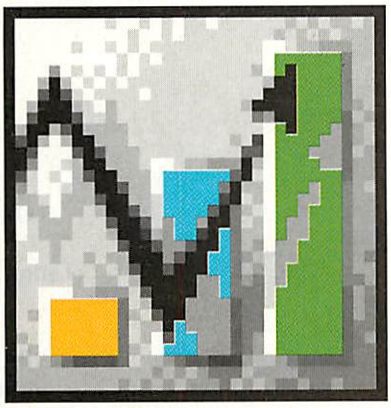
Having spoken to Mark Goodall, who spent weeks planning *Impression* before writing any code, it's interesting to find that Mark takes a totally different attitude to program design.

'We did have a design spec for *View*, but it was a double page booklet, and we didn't stick to it anyway,' he remembers. 'I don't believe in too much planning. You never stick to the first design completely – if you did, it wouldn't be as good as it could be.

'When you're designing a program, you have to draw a distinction between what you're used to and what's actually a better design. You constantly want to go for what's better.

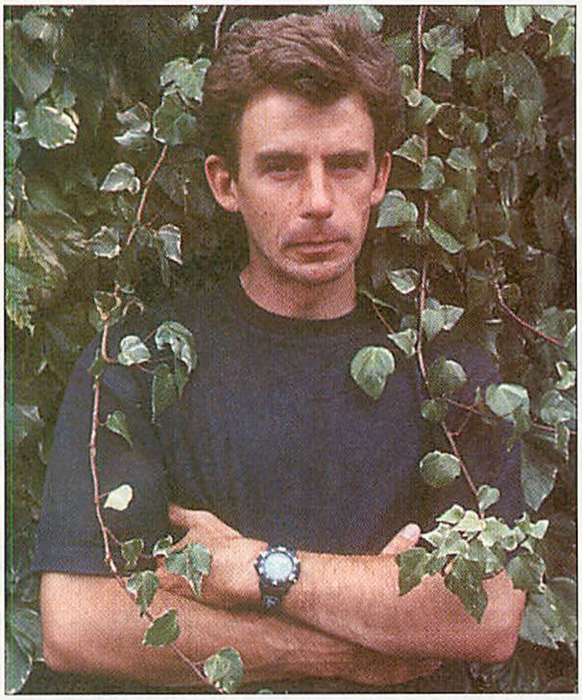
'Take menus. They're part of a clear progression in design. First there was the command line, where you typed "Save filename" or whatever. This was too much trouble, so programmers invented numbered lists that went "One: save, two: load, three: delete" and so on. Menus came next. They're part of the progression, but not the end. They are complex; it's never clear how the levels of menus and submenus should be structured.

'The original purpose of menus was to expose commands and features available on the program, but it is better to design the user interface to do this automatically by presenting an appropriate setup for the context. It is much more intuitive for fresh users this way. Pop-up menus, which bring up a list of items to choose from, are OK, but otherwise a complex menu structure can be a sign of lazy user interface design. We've recently published a program on the PC which has no menus in it at all.'



Mark doesn't see the size of the Acorn market as a bar to producing good software. He doesn't feel threatened by the 'giants' in the software market.

'It's possible to achieve most of what you want on a tiny budget. It's also easy to throw money in the wrong places and generate overkill. Look at Microsoft. *Excel* got huge resources ploughed into it, resulting in a program with a vast and cumbersome library of routines that most users don't have a use for. And with all that money, where did they put the status line? At the *bottom* of the window, as far away from the tool bar as it could be.'



Mark Colton went straight from Oundle School to the South West Technical Products Corporation, a firm in Peterborough. In 1982 he wrote *View* for the BBC micro, and then founded Colton Software when he launched *Pipedream* on both the Archimedes and the IBM PC. Fortunately for us, it was the Acorn version which sold well, prompting Mark to release a RISC OS version, *Pipedream3*. In 1992, the decision was taken to have a new direction, and *Fireworkz* was born, although modules like the spelling and graphing module in *Pipedream* had already been written with this in mind, and could substantially be re-used in the new program.

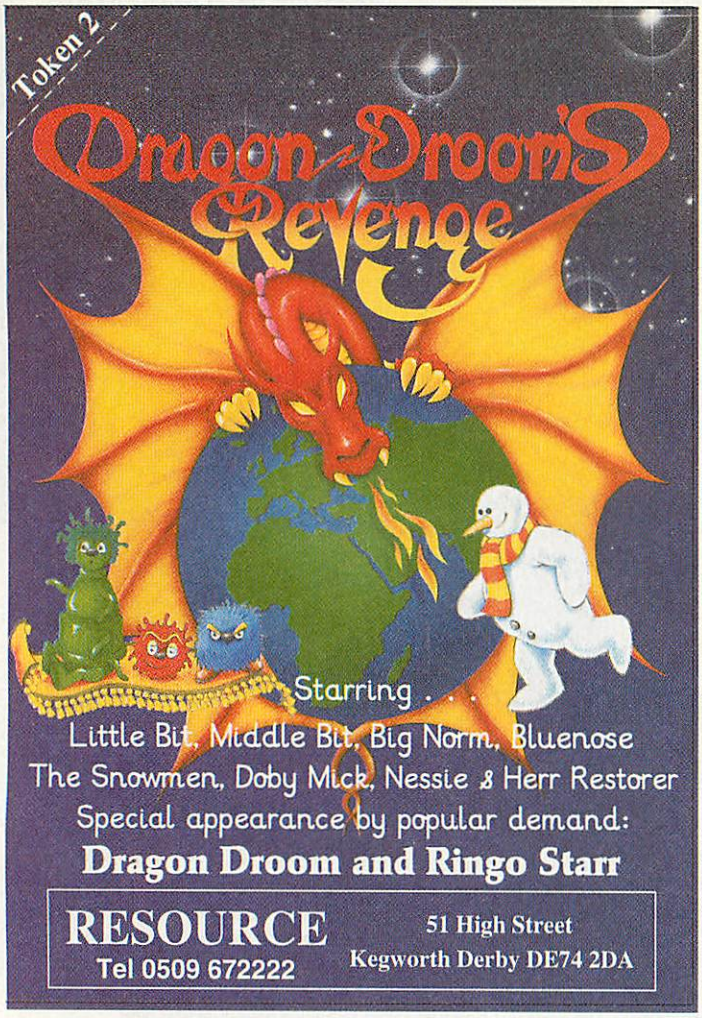
It might seem from Mark's reservations about programming on the Acorn that he would be keen to leave the Acorn market. Indeed, at the time of the interview, the finishing touches were just being put to *Fireworkz for Windows*, the PC version. Does this mean that *Fireworkz* is now as finished as it will get on the Acorn?

'No. Absolutely not. We have a lot of loyal users of Colton software, and I think it's very important to support them. We have a monstrous wishlist for *Fireworkz* which we will start to implement once *Fireworkz for Windows* is shipping.

'Besides which, we are about to bring out *Recordz*, a database for the Archimedes, as part of the *Fireworkz* suite. Incidentally, 70 to 80 percent of the code is identical in *Fireworkz* and *Fireworkz for Windows*. The code is structured in layers, with data structures running vertically through the layers. Only the top layer of code – the code concerned with the user interface – changes at all.

'Colton Software was one of the first software houses to write a major application for the Archimedes. We still have the greatest commitment to the Acorn market; I'm just not sure how much longer the market is going to be around.

'Online Media is a fine idea, but it's got nothing to do with RISC OS. The whole Acorn world is based around RISC OS; it's what makes it special.' AU



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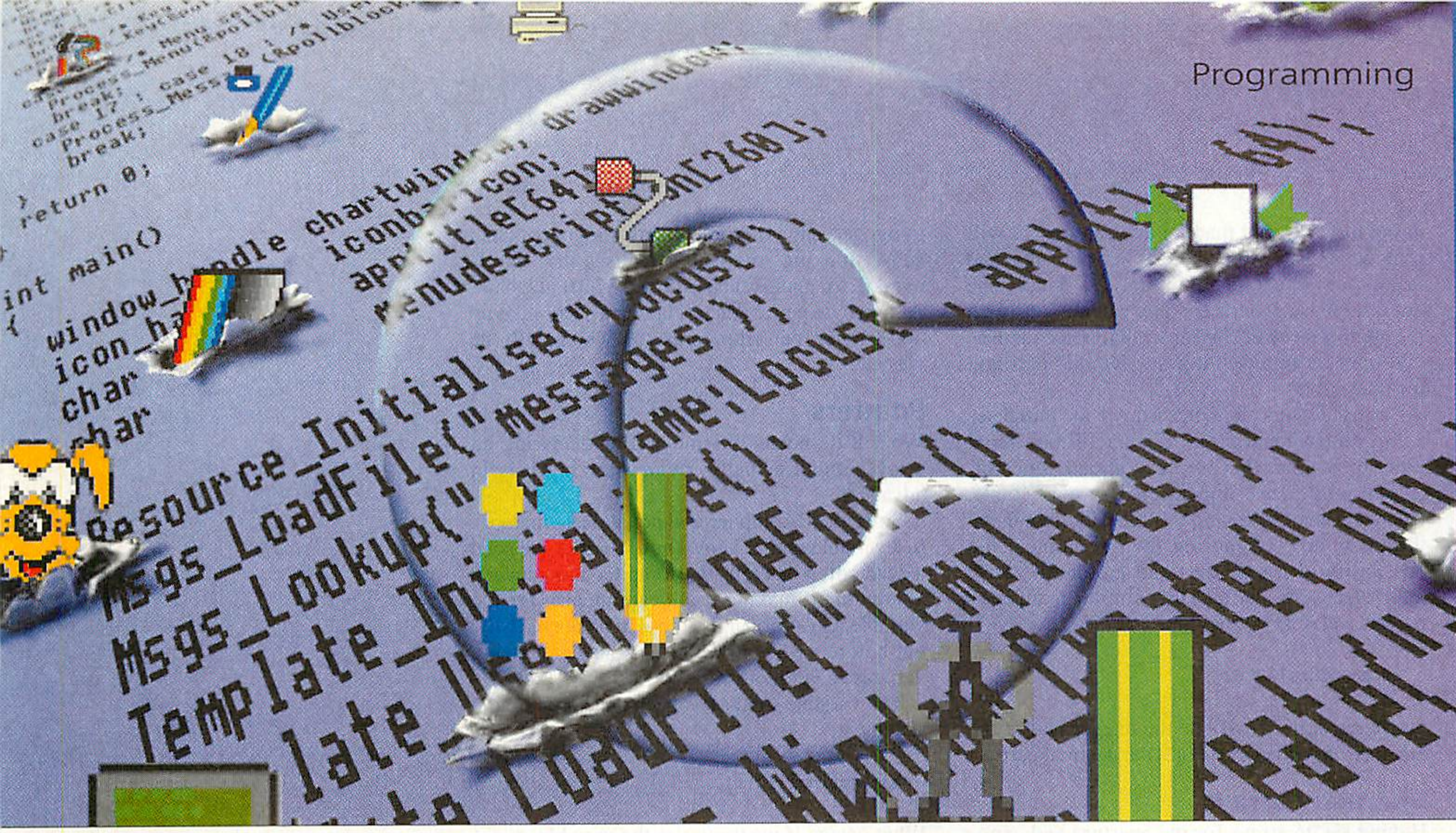
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C for yourself

David Matthewman starts to look at arrays, pointers and strings in C. Pointers are a tricky subject, and will be explored in several stages over the next few issues.

Kate, a photographer, wants to keep track of the photographs that she takes. She needs a database giving, for each photograph, the exposure, aperture, place, filter and date that the photograph was taken. She starts by writing a program to keep track of the exposure information for a roll of 35mm film, which may have up to 36 exposures.

Obviously this can be done by using a set of variables exposure1, exposure2, exposure3 to exposure36. However, Kate will then find it impossible to refer easily to the nth exposure, where n is a number calculated by the program and not known beforehand. The variable exposuren is recognised by the program as a separate variable, not as the nth exposure variable. What she needs, as programmers in other languages will already have realised, is an *array*.

Variable lists

An array variable is really a whole list of variables which can be accessed by number. Instead of the variable list above, you have a variable list exposure[1], exposure[2], exposure[3] to exposure[36], with the nth member of the list being accessed as exposure[n].

Each member of the array is used as an individual variable in expressions, loops, print statements and so on.

The type of each element of the array – which governs the type of the array as a whole – is given in the declaration for the array.

Declarations were explained in the October issue, and are statements which give the C compiler important information about a variable; how much memory to reserve for it, what operations may be performed on it and so on. In this case, Kate decides to keep the exposure information as an array of integers, to save on space and make any calculations quicker.

A negative number will indicate an exposure of the reciprocal of the number; -30 means an exposure of one thirtieth of a second. She declares the array with the following statement:

```
int exposure[40];
```

which is one of two important ways of declaring arrays. We will look at the second way later. The square brackets after the array identify it as an array; the number in the brackets gives the array size. Arrays in C are numbered from zero up to the number given in brackets, so in fact the array size is one larger than the number in the array declaration. Incidentally, Kate has noticed that on a typical 36-exposure film, up to 40 exposures can actually be taken, and has sized the array appropriately.

Kate initialises a second array, aperture, to take the aperture information for the film. She could initialise this array as a float array, since aperture sizes take floating point values. She is wary of

doing this, worried that her aperture of 1.7 will print out as 1.69999999 due to lost precision and make her screen display untidy. Since she doesn't envisage herself doing calculations with the numbers, she decides instead to store them as two integers representing the decimal part and the integer part.

She can do this all in one array if she initialises a two-dimensional array. If a one-dimensional array of the sort that we have already encountered is a list, a two-dimensional array is a table, where an element item[5][3] is the fifth item in the third row down (ignoring for the moment the possibility of a row zero and a column zero). Such arrays are defined in a similar manner to before, and Kate defines hers as:

```
int aperture[40][2];
```

where aperture[n][1] will be the integer part of the nth aperture and aperture[n][2] the decimal part.

Character arrays

Having set up arrays for the aperture and exposure of each picture on the film, Kate must now do the same for the place that each photo was taken. So far, we have only come across character variables which can hold single characters. Those of you familiar with BASIC programming may well be wondering how C handles string variables.

The answer is that it doesn't, not explicitly. Instead, it uses arrays of characters, which are equivalent.

The business of string handling and manipulation is one which we will cover in a later issue. Suffice to say that, because string variables as such do not exist, operations such as copying a string, comparing strings and 'adding' one string to another are not simple. Rather than write string1 = string2, we must use a function and write strcpy(string1, string2).

Initialising a string is a simple array initialisation of an array of charatcters as in:

```
char string[25];
```

In this case it is important to remember that C arrays start from zero, as char[3] will therefore be the fourth character in a given string.

All strings in C are terminated by a zero byte, so are one byte longer than the number of characters in the string anyway. Hence to store a four-letter word an initalisation:

```
char string[4];
```

is needed. In a string containing the word 'RISC', string[0] will contain 'R', string[1] will contain 'I', string[2] will contain 'S', string[3] will contain 'C' and string[4] will contain zero, commonly written '\0'.

Kate can initialise her array of places as follows:

```
char place[40][100];
```

She can, however see a problem with this method. She has allowed place names of up to 100 characters to allow for complicated descriptions such as 'The view over Llanfairpwllgwyngyllgogerychwyrndrobwllllantysiliogogogoch at sunset looking south', but realises that this is overkill for photos such as 'Loco 37401 at Oban'. At one byte per character, her array will take up 4000 bytes per film, most of which will be wasted.

Pointers

What Kate needs is a method of declaring an array without actually saying how big it is in advance.

Since the C compiler will not allocate memory to a variable until it knows how big it is, we need a declaration that tells the compiler about a variable without making it allocate memry for the variable. Unsurprisingly, this can be done easily, but before we see how, let us consider a string variable string1 more closely.

The variable string1 has been deeclared by the statement:

```
char string1[10];
```

What occurs if we try to use the variable string1 without the square brackets? In Basic it would be treated as a totally separate variable, but in C the variable string1 is irrevocably tied to the array string1[]; it holds the address of the first element of the array. In essence, the variable string1 and the array string1[] are two ways of looking at the same object. The variable string1 is called a *pointer*.

We must now be introduced to two unary operators associated with pointers, * and &. * means 'the object pointed to by' and & means 'the pointer to' or 'the address of'. Hence &(string1[0]) is equivalent to string1 and *string1 is equivalent to string1[0].

If you understand that last sentence, then you are most of the way to understanding arrays and pointers in C. If it still seems incomprehensible, don't worry. Pointers are a very difficult area of C to understand, but if you practice using them you will get the hang of them in the end. This is not the last that we will have to say about pointers, and we will continue to treat them with due respect over the coming issues.

The use of the * operator leads to an alternative method of declaring the array string1. It can be declared by the line:

```
char *string1;
```

which declares string1 to have type 'pointer to char', which is equivalent to a character array. If you remember that a definition:

```
char char1;
```

would read 'char1 is a character variable', then you can see that:

```
char *string1;
```

would read 'the object pointed to by string1 is a character variable', which is the same as saying that string1 is a pointer to a character variable.

So far we have only declared string1. We have not yet given it a value – a block of memory to point to – so we cannot use it yet. We will find out how to do this next month. AU

On the disc

The cover disc this month contains a program *Kate1*, Kate's first code fragment for her photo database. The program asks for the size of a film and then prompts the user for information on each frame. In order to do this it uses a number of functions and program statements that we have not yet come across in this series of articles, but hopefully their purpose should be clear enough that you can concentrate on the usage of arrays in the program.

Kate1 is inefficient in a number of ways. Some are due to a desire to make the program easier for beginners to understand; others will be remedied in later programs over the next few issues.

As usual, the source code for the program is in the C directory in the archive, while the compiled and linked ready-to-run application is in the root directory, provided for readers without C compilers to see the output of the program.

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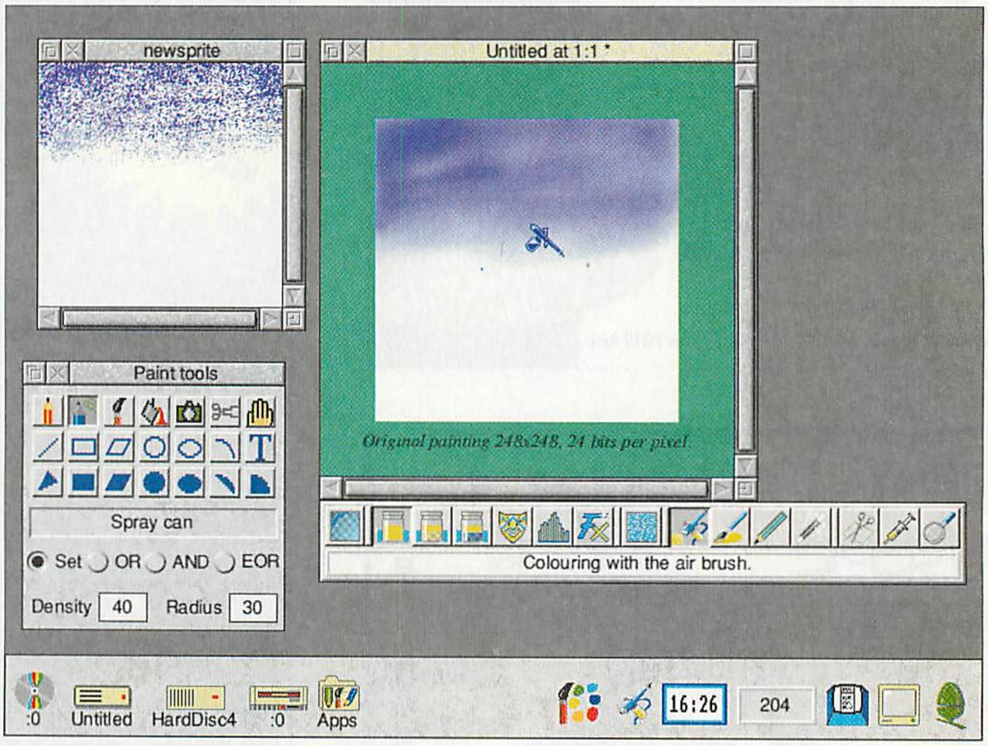
Q I recently bought a Risc PC from Acorn, as I was interested in the graphics capabilities of the new machines. The ability to get screen modes with full 24-bit colour is of great interest to me, as I intend to break into the graphic design market.

I have always used *Paint* for graphic work before on the Archimedes. It is perfectly adequate for simple design work, and while it may not have as many 'bells and whistles' as other bitmap editing packages, it does have the benefit of being free. It has always amazed me that people will pay huge sums of money for packages which – in my honest opinion – barely improve upon the software which comes with the machine.

However, I have run into a problem. *Paint* flatly refuses to edit 32-bit sprites. It will display them, but nothing happens when I use any of the tools. Most of the options on the *Paint* menu are greyed out. About all I seem to be able to do is give the sprite a mask, which isn't very helpful as I can't the edit the mask.

I find this very annoying. Am I missing something, or is this a plot between Acorn and the developers to force me to shell out over £100 for somebody's photo-retouching package that I don't want?

J Wheeler
Leeds



Editing 24-bit images in *Paint* is possible, but unsupported. More expensive packages do have some advantages, nonetheless, including an anti-aliased airbrush.

A **You are – in a sense – missing something. A version of *Paint* capable of editing 24-bit sprites was developed with RISC OS 3.5. However, it was considered too unstable for official release at the launch of the Risc PC, and the version of *Paint* released as standard on the Risc PC is largely the same as the RISC OS 3.1 version.**

You *can* access the new version of *Paint* if you wish. If you set the system variable Paint$Options to X then *Paint* will load the new version. This can be done automatically, by including a line:

```
set Paint$Options X
```

in the *!Run* file of your copy of *Paint*. Note that this is not the official version, and is not supported by Acorn.

Without denigrating *Paint*, I seriously suggest that you look at some of the photo-retouching packages available. Features such as an anti-aliased airbrush tool, 8-bit masking and virtual memory make a very significant difference when working with 24-bit bitmaps. While it is true that *Photodesk*, *DA's Picture*, *Studio24* and *ProArt24* are all over £100, the image creation and processing features that they offer justify the price.

If you do not want to spend this amount, look at *PhotoTouch* from Oregan Developments, or even Shareware programs such as *FineArt* and *Image*.

Q I am having problems connecting to the Internet. My Internet provider has helpfully sent me a copy of *KA9Q*, but it is version 1.2 which is an earlier version than the one you described in your article. I can connect to the Internet, and I am told that there is a more up-to-date version of *KA9Q* available by ftp, but whenever I try to log on to the ftp site I get a stream of numbers sent back which causes my login to fail. I am left in the ftp window apparently unable to do anything except quit.

I have no doubt that a more up to date version of *KA9Q* would solve my problem with

ftp-ing, but I can't get a more up to date version if I can't get ftp to work. Should I change my name to Yossarian?

Peter Woodvine
Woking

A **To start with, later versions of *KA9Q* can usually be found on Bulletin Boards such as Arcade. If you are able to access those, then you should be OK.**

There was a problem with *KA9Q* version 1.2 and the DIS ftp site, which was cured in later versions.

The problem occurred because of a login protocol which was changed. It seems you have run into a similar problem. The solution is to type:

```
user anonymous
pass <username>@<address>
```

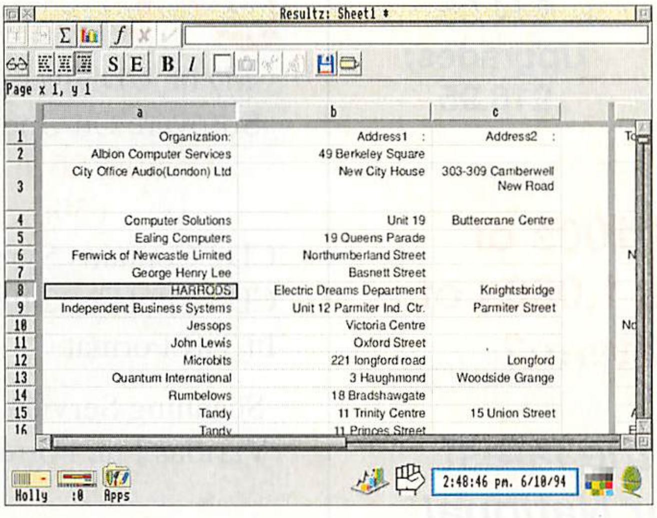
inside the ftp session, after it has rejected your initial login, substituting <username> and <address> as appropriate. This should successfully log you in as a guest user, and you will be able to load in the newer version of *KA9Q*.

The newest official version of *KA9Q* that I am aware of is 1.31. However, version 2.06f is commonly available, despite officially being a beta test version. By the time that you read this, version 2 may be available as an official release, in which case this is definitely the version to go for, as it is a significant improvement on earlier versions of *KA9Q*.

There will shortly be a commercial package which supports SLIP connections to the Internet: *Termite Internet* from Doggysoft (01494) 673222. I must remain sceptical unti I have actually seen this in action, but on the face of it, this looks like a good product.

Just to forstall the flood of letters which may well turn up asking whether Acorns can access all the exciting features of the fabled Worl Wide Web, the answer is no, not yet. Acorns can navigate the Web textually by logging in to a server, but as far as graphics goes you either need a PC emulator running *Mosaic* or *Cello*, or a RISC iX machine.

Native Archimedes WWW browsers are much promised but so far one has yet to appear.



A list of Acorn dealers is available by ftp from Acorn.

Q I am often told, in answer to some query or other about my machine, to 'contact my local Acorn Dealer'.

This is all very well, and I'm sure that they will be a fount of knowledge, but I have no idea who my local dealer actually is How do I find this information out?

J Dalton
Reading

A **A list of your Acorn dealers can be obtained from Acorn itself. The Customer Services department keeps an up-to-date list and will tell you who your local dealer is.**

If you have Intenet access, the list can be found by ftp-ing to ftp.acorn.co.uk and looking in the *pub/documents/dealers* directory. Be warned that this list changes regularly, so always download the latest version rather than rely on an old copy.

Acorn's address is Acorn Computers Limited, Acorn House, Vision Park, Histon, CB4 4AE. The phone number is (01223) 254254.

The RISC OS 3 self-test

One of the features that users find upon upgrading to RISC OS 3 is the tendency for the computer to run through an alarming series of coloured screens when it has just been switched on. Even worse is when, having installed RISC OS 3, the machine fails to boot up at all, and the user is presented with a blank red screen.

This is a result of RISC OS 3 performing a self-test before booting up. RISC OS 2 simply took on faith that the memory, VIDC, IOC and the rest were working, but RISC OS 3 is not so trusting and checks. The screen changes colour to indicate what is being tested, and if it fails the computer is left with a blank red screen. One result of this is that if you install RISC OS 3 in a machine whose memory is not working properly, it will refuse to start up. The tendency is to blame the RISC OS 3 upgrade, when in fact it was only reporting a fault which was already there.

Not only does it test the ROM and RAM in the computer, RISC OS 3 will also tell you what is wrong. To do this, it uses its own variant on Morse code, and flashes the disc drive light on and off. What it is actually flashing is a 32-bit word – in nybbles of four bits each – starting with the most significant bit.

The seven least significant bits are status bits to indicate what has been checked:

1. Self-test performed due to power on.
2. Self test due to interface hardware.
3. Self test due to test link.
4. Memory test performed.
5. ARM3 detected.
6. Memory test disabled.
7. PC-style IO world detected.

The other bits indicate where the fault was found; not all of them are used:

10. ROM checksum failed.
11. MEMC CAM mapping failed.
12. MEMC protection failed.
15. VIDC video interrupt timing failed.
16. VIDC sound interrupt timing failed.
18. RAM control line failed.
19. RAM test failed.

This information is extremely useful when diagnosing the problem, and it can enable you to decide whether to blame your five-year-old memory upgrade, the VIDC chip that you knocked with your screwdriver while installing the upgrade or the cat hairs in your MEMC1A.

The self-test can fail if certain third-party VIDC enhancers are fitted. If this seems to be the problem, you can toggle the self-test bit in CMOS with the following BASIC code:

```
SYS "OS_Byte",161,&BC TO ,,data%
data% = data% EOR &80
SYS "OS_Byte",162,&BC,data%
```

which should enable the self test to cope with the VIDC enhancer.

On an ARM2 A310, the self-test can take a worryingly long time, though it tends to zip by quite smoothly on an A5000. This is not actually a cause for concern, because the older Archimedes is simply a slower machine. In fact, many people find RISC OS 3 runs too slowly on an ARM2, and upgrade to and ARM3 quickly.

Thanks to banks_p@kosmos.vcc. govt.nz for maintaining the comp.sys.acorn FAQ list, from which many technical details were gleaned. This is posted monthly to the comp.sys.acorn usenet group, and contains a list of the most frequently asked questions about Acorns – and the answers, naturally.

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Acorn customer hotline

Essential information compiled by Dave Walker of Acorn Customer Services exclusively for Acorn User.

Questions and Answers

I want to connect another IDE hard disc to my Risc PC. What links must I set?

Assuming you are fitting a second hard disc similar to the one already fitted (a Conner CFS series), you need to make sure that the A̅/C link is fitted to both drives and that the M/S link is only fitted to the drive connected directly to the motherboard. C̅/D should be left in the state it was in at shipping.

Updates to the RISC OS applications disc

Following on from the release of *Printers* 1.22, Acorn has released another disc containing improved versions of applications originally supplied with RISC OS 3.1. The disc contains:

- *Alarm*, version 2.61
- *Calc*, version 0.53
- *ChangeFSI*, version 0.95
- *Chars*, version 1.17
- *PrintEdit*, version 0.38
- *T1ToFont*, version 1.26
- *3Dupgrade*

The applications have been changed in various ways. As well as feature enhancements, known problems with the applications have also been fixed. The applications now automatically contain the 3D icons and templates supplied as part of *NewLook*, so there is no need to use the *NewLook* templates.

- *ChangeFSI* has been updated to support further image formats, and the formats previously supported have been updated.
- *PrintEdit* has been updated to allow support for the new options available within the Printer Definition files supplied with *Printers* 1.22.
- *T1ToFont* has been updated in various ways. If you have a Type 1 file but no corresponding AFM file, you can produce a usable font by simply leaving the 'AFM file' field blank. The resulting font will lack kerning information, so do use the AFM file if you have it.

Most alphabetic fonts should convert successfully with the Encoding field set to 'Acorn Extended Latin'. Some symbol fonts have their own private encoding; for these it is recommended that you select 'As specified in Type 1 file' from the Encoding menu.

This causes the font's internal encoding to be used, ensuring that the glyphs are placed at the correct character codes. The encoding is also deposited in a file named *Encoding* in the font's directory, where the font manager and printer drivers can make use of it.

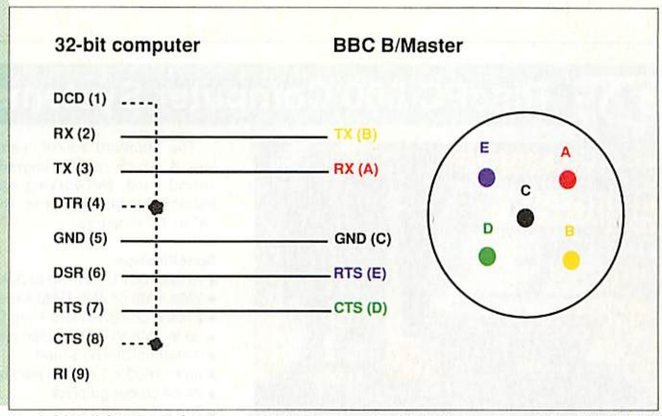
The directory *3DUpgrade* contains two BASIC programs, one called *2D* and the second called *3D*. The programs can be used to set the correct bit in CMOS RAM to ensure the templates and icons are shown in 3D or 2D depending on your choice.

Alarm, *Chars* and *Calc* have had minor fixes made to them.

The disc containing this upgrade suite should be available via all Acorn dealers from 26 September.

Serial ports, printers and modems: Part 2

Unlike IBM PC compatibles, Acorn machines default to using the DSR line to flag readiness to transmit, and require the presence of the DCD signal. On machines fitted with the 82710 or 82711 serial controllers and the Risc PC, it is possible to change which signals are used for flagging in software, using the SWI "OS_SerialOp",0 command. Thus an IBM compatible cable may be used; the option to reprogram the serial port in this manner is currently provided by some serial communications software. If you have a suitable machine and prefer to use an over-the-counter IBM standard cable rather than resort to making your own, check with the supplier of your communications software that there is an option to reprogram the serial controller.



Serial lead for transferring data between the 32-bit range and the Model B/ Master.

It is possible to transfer data between a 32-bit Acorn computer and an 8-bit BBC Model B/Master series via the serial port; the wiring diagram for the appropriate cable is presented below.

On the transmitting system (assumed to be the Model B), issue:

```
*FX8,4
*FX3,1
```

The first call sets the transmission rate to 1200 baud, and the second selects the serial port for output. From BASIC on the receiving machine, (assumed to be a 32-bit machine), issue:

```
SYS"OS_SerialOp",1,0
SYS"OS_SerialOp",5,4
*FX2,1
```

The first command configures the parity and word size: note that the Model B defaults to one stop bit per word, whereas the 32-bit range defaults to two. The second sets the receive rate to 1200 baud, and the third sets standard input to be via the serial port.

Performing a LIST on a BASIC program stored in the BBC's RAM, or a *TYPE on a text file stored on disc, will cause the program or text to be loaded into whichever RISC OS application has the caret on the receiving machine.

To terminate communication, issue:

```
*FX3,0
*FX2,0
```

on both machines; the receiving machine should terminate communication first.

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RiscPC 600 Computer Systems



The RiscPC from Acorn offers all the traditional strengths of RISC processing, and a great deal more, at a remarkably affordable price. Based on a 30MHz ARM610 processor, the RiscPC simply leaves the competition standing.

It is the world's most cost-effective 32-bit RISC computer. The graphics on the RiscPC are astounding - 24-bit colour (2Mb VRAM required) at resolutions up to 1600 x 1200 pixels. The memory capacity starts at 2Mb and can be expanded to a massive 256Mb. A special slot for a 2nd processor is provided, allowing you to add an additional ARM processor or any other processor, so allowing easy low cost access to DOS and Windows based applications.

The standard sound system offers 8 channel stereo sound, which can be upgraded with the optional 16-bit sound card. Networking options include Econet and industry standard Ethernet. There is also a choice of either 14" or 17" monitors.

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RiscPC Upgrade Options

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ARA0400/U	upgrade from 0Mb to 1Mb VRAM	£99.00
ARA0410/U	upgrade from 1Mb to 2Mb VRAM	£79.00

Hard Disk Upgrade Options

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MKA1620/U	upgrade from 14" to 17" Aries 7560 monitor	£299.00
MKA1670/U	upgrade from 14" to 17" Acorn AKF85 monitor	£379.00

Miscellaneous Options

AEA1650/U	upgrade to 486SX33 PC Card	£99.00
APA0250/U	upgrade to CAA300i CD ROM drive	£189.00
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Above prices apply at time of system purchase

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- Impression Publisher
- Artworks

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Specification:
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Acorn 32-bit RISC Computer Systems



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Monitor Options

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- Bravo CD-ROM drive – A3000 £299
- Bravo CD-ROM drive – A5000 £299

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Dual speed SCSI CD-ROM drive, available as a single drive, or dual and quad speed versions with a SCD autochanger. Interface not included.

- Victor 402A CD-ROM drive £299
- Victor 632A CD-ROM drive £399
- Victor 602 - dual speed 6CD A/C £499
- Victor 604 - quad speed 6CD A/C £969

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The 15" and 17" models are also EPA compliant, ideal for use with RiscPC which supports this type of monitor.

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- 15" FST tube 0.20mm dot pitch
- 1280 x 1024 resolution @ 60Hz
- 29KHz to 70KHz horizontal frequency
- Digital controls with LCD display
- Low radiation MPR II standard

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Scan256 Scanner

Scan256 gives you up to 256 grey levels at a maximum resolution of 400dpi and is supplied with state-of-the-art software. This makes it the only sensible scanning and image processing solution for Acorn 32-bit machines.



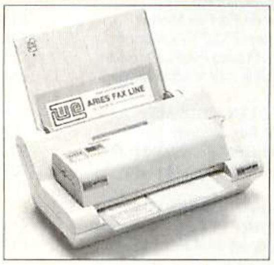
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- Scan256 for A3000 external £139

Archi A4 Scanner



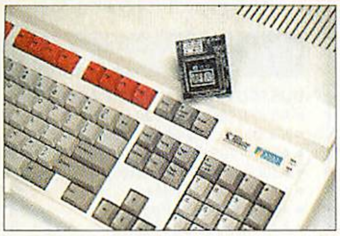
The 216mm scanning width can cope with both desktop scanning of single sheets, photographs, etc, with its detachable sheet feeder, or used as an A4 wide hand scanner. 64 grey levels are produced from the scanner at resolutions up to 400dpi.

- A4 Scanner for A300/A400 £199
- A4 Scanner for A3000 £229
- Sheet Feeder for A4 Scanner £69

Upgrade to Archi A4 Scanner

For existing users of the Archi MK2 hand scanner we can offer you an upgrade to the A4 Scanner for only **£129**

25MHz ARM3 Turbo Card



Using the latest surface mount technology on a high quality 4 layer PCB, the ARM3 Turbo Card will increase the speed of your A300, A400 or A3000 computer by up to 6 times.

The upgrade can be fitted by the user in A300 and A400 machines, but for owners of the A3000 we can collect, fit and deliver your computer back for an additional £34.

Owners of A300 and old A440 models will require a MEMC1A upgrade to use the ARM3.

Buy ARM3 Turbo Card and RISC OS 3.1 upgrade for £167

Special Offer Price £99

Fax/Modem Bundle

Now you can use your Archimedes computer as a fax machine. Prepare a fax, send it using the ArcFax software. Receiving a fax is simple - display on the screen or print out on any RISC OS printer.

- Fax/Modem with ArcFax software £149

Hard Disc Drive Upgrades

A3000/A3010 Internal IDE Hard Drives

ADA0730	120Mb	19ms	£189
ADA2360	170Mb	11ms	£219
ADA1070	250Mb	11ms	£249
ADA2080	340Mb	11ms	£309
ADA2200	540Mb	10ms	£489

A300/A400 Internal IDE Hard Drives

Complete with interface, drive, cables and mountng brackets

ADA2010	250Mb	13ms	£179
ADA0580	365Mb	13ms	£199
ADA2030	420Mb	12ms	£249
ADA2210	540Mb	11ms	£299

A5000 Internal IDE Hard Drives

To replace existing hard drive, if required to be additional drive, 2nd drive kit will be needed.

ADA2050	250Mb	13ms	£149
ADA0880	340Mb	13ms	£179
ADA2000	420Mb	12ms	£199
ADA2220	540Mb	11ms	£259

A300/A400 IDE Hard Cards

ADA0680	120Mb	19ms	£209
ADA1090	250Mb	11ms	£259
ADA2000	340Mb	11ms	£319
ADA2230	540Mb	10ms	£499

A300/A400 SCSI Hard Drives

Complete with 16-bit interface, drive, cables and mountng brackets

ADA2300	365Mb	12ms	£340
ADA2310	540Mb	11ms	£429
ADA2320	1.0Gb	9ms	£579
ADA2330	2.0Gb	10ms	£1069

Cables & Accessories

- A5000 2nd Drive Kit £10
- 16-bit IDE Interface - A300/A400 £39
- 8-bit IDE Interface - A3000 £49
- SCSI Interface - A300/A400 £119
- SCSI-2 Interface - A300/A400 £199
- 25w - 50w SCSI Cable £10
- 50w - 50w SCSI Cable £16
- 50w - 50w SCSI-2 Cable £20

Memory Upgrades

- A3000 to 2Mb RAM upgrade £49
- A3000 to 4Mb RAM upgrade £119
- A3000 to 8Mb RAM upgrade** £259
- A3010 to 2Mb RAM upgrade £59
- A3010 to 4Mb RAM upgrade £139
- A3020/A4000 to 4Mb RAM upgrade £89
- A410/1 to 2Mb RAM upgrade £35
- A410/1 to 4Mb RAM upgrade £70
- A420/1 to 4Mb RAM upgrade £105
- A540 additional 4Mb RAM upgrade £249
- A5000 to 4Mb RAM upgrade £79
- A5000 4Mb to 8Mb RAM upgrade £259
- RiscPC additional 2Mb RAM £85
- RiscPC additional 4Mb RAM £139
- RiscPC additional 8Mb RAM £279
- RiscPC additional 16Mb RAM £499
- RiscPC additional 32Mb RAM £999

** Dealer fit only

RISC OS Upgrades

- RISC OS 3.1 Single User upgrade £73
- RISC OS 3.1 Bulk Software upgrade £319
- RISC OS 3.1 Hardware upgrade £21

Graphics Cards

- Colour Card Gold £239
- Chroma 500 Genlock card £419
- Chroma 150 PAL Encoder £169
- Chroma Genlock card £209
- Hawk V9 MKII Digitiser £189
- Eagle M2 Multimedia card £319
- Scanlight Video 256 £199
- Multiscan VIDC Enhancer £15
- SuperVGA VIDC Enhancer £29
- Vision24 254-line Colour Digitiser £99
- Vision24 508-line Colour Digitiser £139
- CC TV Tuner card £89
- CC Movie Magic MPEG card £249

We stock a full range of add-ons and expansion cards from HCCS, Computer Concepts, Wild Vision, Cumana, Aleph One, IFEL, Lingenuity and Acorn. If there is a product you can't see here, it doesn't mean we don't stock it.

Call 01582 745555 for price and availability

TO ORDER CALL OUR SALES HOTLINE 0582 745555
or FAX YOUR ORDER on 0582 488588

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ArcScan Flatbed Scanners



The ArcScan range of professional flatbed scanners for the Acorn 32-bit RISC machines and the RiscPC, are incredible value for money. Whatever your budget, there is a model for you. There are 3 models in the range, from a 256 grey scale scanner through to a 24bit high speed scanner.

All models use the new industry standard SCSI-2 interface*, which allows you to scan a full A4 page in just 15 seconds (mono) and in a few minutes (24-bit colour).

The scanners are ideal for anyone in the publishing field, requiring to import scanned images easily into their documents.

The scanners are amazingly fast. Using the industry standard TWAIN drivers and state of the art SCSI-2 interface technology, the ArcScan is probably the most powerful, yet easy to use scanner available.

All scanners are supplied complete with ImageMaster scanning software and Sleuth OCR software. An optional SCSI-2 interface is available to give the best performance. Also available are a 50-sheet auto document feeder and a transparency adaptor.

Special prices available to Schools, Colleges and other Educational establishments.

Aries

Accessories

- SCSI-2 Interface & Cable £166
- 50 sheet Document Feeder £259
- Transparency Adaptor £295

FREE Software

All models come complete with two software packages –

ImageMaster
Image capture and graphics enhancement software.

Sleuth OCR
Software for turning scanned text into an editable format.

(4Mb RAM required to use scanner)

ArcScan 3420

- 256 grey scale scanner
- 300 x 600 dpi optical resolution
- 1200 x 1200 dpi max resolution
- 216 x 356 mm scanning area
- single pass scanning process

AVAILABLE NOW **£499**

ArcScan 3520

- 24-bit colour scanner
- 300 x 600 dpi optical resolution
- 1200 x 1200 dpi max resolution
- 216 x 356 mm scanning area
- single pass scanning process

AVAILABLE SHORTLY **£549**

ArcScan 2412

- 24-bit colour scanner
- 300 x 600 dpi optical resolution
- 2400 x 2400 dpi max resolution
- 216 x 356 mm scanning area
- single pass scanning process

AVAILABLE SHORTLY **£699**

Modems

PACE MODEMS
- Microlin FX Fax Modem £112
- Microlin FX32 Fax Modem £169
- Linnet Quad FX Fax Modem £117
- Ultralink 32+ V32bis Modem £349

DATAFLEX MODEMS
- GEM Fax Modem £75
- SuperGEM Fax Modem £149
- Rapier Plus Fax Modem £379

US ROBOTICS MODEMS
- Sportster 14.4 Fax Modem £119
- Worldport 14.4 Fax Modem £174

- ArcFax 1.10 fax software £35
- Archimedes serial cable – 300/400 £9
- A5000/RiscPC serial cable £7

BBC Products

- AMX Super Art (ROM/Disc) £10
- AMX Stop Press (ROM/Disc) £10
- AMX Page Fonts for Stop Press £5
- AMX Mouse & FREE mouse mat £15
- Quest Paint software (ROM/Disc) £15
- ConQuest ROM £12
- Quest Fonts Disc £5
- Quest Integrex 132 printer driver £5
- Quest Tracerball - BBC B/M128 £20
- Quest Mouse Mat £3
- InterWord ROM £36
- InterSheet ROM £36
- InterChart ROM £25
- Logotron Logo ROM £40
- Mega3 ROM - Word/Sheet/Chart £69
- Numerator ROM £39
- Pendown ROM £32
- SpellMaster ROM £40
- Wapping Editor £29
- Wapping Art Disc £10
- Wapping Font Disc 1 £10
- Wapping Font Disc 2 £10
- View Printer Driver ROM £15
- View 3.0 ROM £45
- ViewSheet ROM £36
- ViewStore ROM £36
- ViewSpell ROM £28
- Master 512 Co-processor £49
- Master 65C 102 Co-processor £39
- 32K ROM/RAM Card - BBC B £29
- 64K ROM/RAM Card - BBC B £39
- 128K ROM/RAM Card - BBC B £59
- 32K Shadow RAM Card - BBC B £29
- 16K Static RAM for ROM/RAM Card £8
- 16K DRAM upgrade for ROM/RAM £7
- Battery backup for ROM/RAM Card £3
- Sideways RAM Utilities Disc £5
- Twin ROM Cartridge for Master 128 £6
- Quad ROM Cartridge for Master 128 £12
- Data Duck £10
- Power Duck £5
- Acorn 1772 DFS Kit - BBC B £47
- Acorn ADFS ROM Upgrade £25
- Watford 1772 DDFS Kit - BBC B £29
- BBC BASIC 2 ROM £15

Monitors

ACORN MONITORS
- AKF30 14" RGB Colour Monitor £179
- AKF40 14" RGB Colour Monitor £179
- AKF52 14" Multiscan Monitor £249
- AKF50 14" Hi Res Multiscan Monitor £299
- AKF60 14" ES SVGA Monitor £319
- AKF85 17" PS SVGA Monitor £969

TAXAN MONITORS
- Taxan EV400LR - 14" SVGA Monitor £208
- Taxan 787LR - 14" SVGA Monitor £209
- Taxan 580LR - 15" SVGA Monitor £339
- Taxan 885LR - 17" SVGA Monitor £719
- Taxan 865LR - 17" SVGA Monitor £599

PANASONIC MONITORS
- Panasync T1537 - 15" SVGA Monitor £359
- Panasync 1732 - 17" SVGA Monitor £589

CONNECTING CABLES
- Arc to AKF30/AKF40 Monitor lead £7
- Arc to VGA Monitor Adaptor £9
- 15-pin - 15-pin VGA Lead £12
- 15-pin VGA Extension Lead £12

Add-On Cards

I/O EXPANSION CARDS
- A3000 User Port/MIDI card (AKA12) £44
- A3000 User/Analogue/IIC card £35
- I/O Podule - Analogue/User/1MHz £79
- Archimedes Analogue/User I/O card £49

ULTIMATE EXPANSION SYSTEM
- Ultimate Expansion Interface £39
- Ultimate Expansion with IDE Interface £99
- Ultimate SCSI uPodule £69
- Ultimate Vision Digitiser uPodule £69
- Ultimate MIDI uPodule £49
- Ultimate Analogue uPodule £29
- Ultimate ScanLight 256 uPodule £229

DISC CONTROLLER CARDS
- ST506 Hard Disc Interface £59
- 16-bit IDE Interface - A300/A400 £39
- 8-bit IDE Interface - A3000/A3010 £49
- 16-bit SCSI Interface £119
- SCSI-2 Interface £189
- External Floppy Disc Interface £10

MISCELLANEOUS ADD-ONS
- 4-way Backplane - A300 series £22
- Fan for Backplane £8
- A3000 Serial Port Upgrade (AKA18) £19
- Arc to BBC Serial Transfer Link £15
- MEMC1A upgrade £29
- Floating Point Accelerator - A5000 £99
- MIDI Expansion Card (AKA16) £65
- Laser Direct Hi-Res 4ppm Printer £799
- ArcLaser A4-1200 Printer £985
- Scanlight 256 - A3000 internal £199

UNIVERSAL 2010 CONCEPT KEYBOARD
- 2010 A3 Concept Keyboard £107
- BBC User Port Cable £12
- Archimedes Serial Port Cable £12

Networking

ACORN ECONET PRODUCTS
- Econet Interface - all models £49
- Ethernet Interface III - A5000 £149
- Ethernet Interface - RiscPC £99

Acorn Access Peer to Peer Networking
- Acorn Access - A3000 £145
- Acorn Access - A3020 £145
- Acorn Access - A5000 £145
- Acorn Access - RiscPC £119

I-CUBED ETHERNET PRODUCTS
- Accord P/P Networking - A3000 £145
- Accord P/P Networking - A3020 £149
- Accord P/P Networking - A5000 £145
- EtherLAN Card - A3000 (BNC) £131
- EtherLAN Card - A3020 (BNC) £143
- EtherLAN Card - A5000 (BNC) £131
- EtherLAN Card - A3000 (B/TP) £131
- EtherLAN Card - A3020 (B/TP) £148
- EtherLAN Card - A5000 (B/TP) £131
- EtherLAN Card - RiscPC (B/TP) £113

ETHERNET HUBS
- 8 port UTP Ethernet Hub £179
- 12 port UTP Ethernet Hub £259
- 16 port UTP Ethernet Hub £329

ETHERNET CABLING

Cable length	Thin	UTP
3m	£5	£3
5m	£6	£5
10m	£9	£8
15m	£12	£10
20m	£17	£14

NETWORKING SOFTWARE
- AUN/Level 4 Fileserver Rel.3 £359
- TCP/IP Protocol Suite - s/user £99
- TCP/IP Protocol Suite - site licence £399

Archi Spares

- Archimedes keyboard (cased) £99
- A4000 Keyboard (cased) £79
- Replacement keyboard - A3000/A3010 £29
- Keyboard Controller PCB - MK2 Kbd £49
- A300/A400 Power Supply Unit £59
- A3000 Power Supply Unit £35
- A4000 Power Supply Unit £59
- A5000 Power Supply Unit £69
- 3.5" FDD for A3000/A4000 £39
- 3.5" FDD for A3010/A4000/A5000 £39
- VIDC Video Controller (VL86C310) £39
- IOC I/O Controller (VL86C410) £39
- MEMC1A (VL86C110) £25
- ARM2 8MHz CPU (VL86C010) £29
- 256K x 4 120ns ZIP DRAM £6
- Replacement Keyboard Cable £17
- Replacement Mouse Cable (state type) £12
- Replacement Mouse Ball £5
- 1.2v NiCad Battery - A3000/A5000 £4
- AA Batteries - A300/A400 (pair) £2
- Fan Filter £2
- Eject Button - A3010/A3020 FDD £3
- Loudspeaker £2

BBC Spares

BBC B SPARES
- BBC B Power Supply £49
- BBC Keyboard £35
- Keyswitches £1
- Functon Keystrip Holder £3
- Serial/Video ULAs £10
- 6502A CPU £5
- 6512A VIA £5
- 6845 CRTC £10
- 6850 ACIA £8

MASTER 128 SPARES
- Master 128 Keyboard £62
- Master 128 Battery Pack £4
- Master 128 Power Supply £69
- Master ULAs £15
- 1772 Disc Controller £10
- 6818 Real Time Clock £12
- Loudspeaker £3
- 65SC12 CPU £12

Accessories

DUSTCOVERS & CARRY CASES
- A3000 Keyboard Dustcover £5
- A3000 Micro & Monitor Dustcover £9
- A300/A400 Dustcover £9
- A5000 Combined Dustcover £9
- 14" Monitor Dustcover £6
- A3000 Shoulder Bag £10
- A4 Notebook Carry Case £35

MICE & JOYSTICKS
- Mk4 Archimedes Mouse £24
- Acorn Logitech Mouse £29
- Voltmace DeltaCat Joystick £25
- Quest Tracerball £20

MISCELLANEOUS ACCESSORIES
- Battery Pack for A4 Notebook £49
- A3000 Monitor Stand £15
- A3000 External Podule Case £10
- Archimedes Keyboard Extension Lead £5
- Archimedes Mouse Port Splitter £5

PC Cards

Transform your Archimedes so you can run standard PC MS-DOS software and even Windows 3.1. Available as a bare card with either 486SLC25 or 486SLC2-50 (no memory) or with 4Mb RAM fitted. Prices do not include DOS or Windows, which we can supply for an extra £99, at time of purchase only.

- 486 25MHz 0Mb RAM £369
- 486 25MHz 4Mb RAM £529
- 486 50MHz 0Mb RAM £449
- 486 50MHz 4mb RAM £609
- 4Mb SIMM RAM Module £149
- 8Mb SIMM RAM Module £299
- 16Mb SIMM RAM Module £499
- 486SX33 Card for RiscPC £199
- MS DOS 6.2/Windows 3.1 £99

TO ORDER CALL OUR SALES HOTLINE 0582 745555
or FAX YOUR ORDER on 0582 488588

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Printers & Accessories

Laser Printers

All Laser printers (excluding Hewlett Packard & Panasonic 4400/4401/5400) include 12 Months On-Site maintenance

Brother HL630	6ppm	£379
Brother HL-6V	6ppm	£456
Canon LBP 4i	4ppm	£469
Canon LBP-8 IV	8ppm	£920
Canon LBP-8 IIIR	8ppm	£1559
Epson EPL-3000	4ppm	£425
Epson EPL-5200	6ppm	£475
Epson EPL-5600	6ppm	£656
Epson EPL-7500 PS	6ppm	£1135
Fujitsu VM600	6ppm	£499
HP Laserjet 4L	4ppm	£395
HP Laserjet 4 ML	4ppm	£735
HP Laserjet 4P	4ppm	£595
HP Laserjet 4MP	4ppm	£850
HP Laserjet 4MV	4ppm	£1989
HP Laserjet 4V	4ppm	£1389
HP Laserjet 4+	12ppm	£940
HP Laserjet 4M+	12ppm	£1260
HP Laserjet 4Si	16ppm	£2095
HP Laserjet 4Si MX	16ppm	£2990
NEC SuperScript 610	6ppm	£273
OKI OL-400ex	4ppm	£319
OKI OL-410ex	4ppm	£445
OKI OL- 850 PS	8ppm	£1199
Panasonic KX-P4400P	4ppm	£290
Panasonic KX-P4401P	4ppm	£369
Panasonic KX-P4410*	5ppm	£325
Panasonic KX-P4430*	5ppm	£480
Panasonic KX-P4440*	10ppm	£765
Panasonic KX-P5400	4ppm	£595
Star LS-5 TT	5ppm	£528
Star WinType 4000	4ppm	£296

*2 years on-site warranty

Laser RAM Upgrades

Type	1M	2M	4M	8M
Canon LBP-4+	£139	–	–	–
Canon LBP-4i	£109	–	£279	–
Canon LBP-8 IV	£119	–	£299	–
EPL-4100/4300	£70	£110	£205	–
EPL-5200/5800	£58	£115	£215	–
Fujitsu VM600/VM4	£57	£85	£149	£299
Fujitsu VM800	£115	–	–	–
HP III/IIIP/IIID	£75	£115	£135	–
HP II/IID	£75	£115	£135	–
HP IIISI	£57	£85	£158	£299
HP 4/4M/4P/4MP	£85	£85	£149	£299
HP 4L/4ML	£75	–	–	–
KX-P4410/4430	£129	£199	–	–
KX-P4420/4450i	£75	£115	£135	–
KX-P4400/5400	£89	£139	£229	–
OKI OL400e	£99	£118	–	–
Star LP-8	£138	£225	–	–
Star LS-5	£75	–	–	–

Laser Consumables

Type	Toner	Drum	Dev
Brother HL630	£20	£99	–
Canon/Star 4s	£46	–	–
Canon LBP-8 IV	£70	–	–
Canon LBP-8 III	£52	–	–
EPL-4100/4300	£75	£89	–
EPL-5200	£85	–	–
EPL-7100/7500/8100	£117	–	–
Fujitsu VM600	£85	–	–
Fujitsu VM800	£115	–	–
Fujitsu VM4	£29	£149	£89
HP II/III/IIID	£47	–	–
HP IIP/IIIP	£46	–	–
HP IIISi/4Si	£85	–	–
HP 4/4M/4P/4MP	£72	–	–
HP 4L/4ML	£49	–	–
NEC 610	£85	–	–
NEC S80/S62P	£105	–	–
OKI OL-400/800	£19	£189	–
OKI OL-400e	£17	£129	–
KX-P4410/30	£29	£80	£90
KX-P4440	£32	£108	£115
KX-P4420	£24	£60	£55
KX-P4450/501/51/55	£18	£75	£60
KX-P4400/5400	£32	£69	–
Qume Crystalprint	£99	£189	–
Star LS-5	£83	–	–

Laser Accessories

JetPage Postscript Cartridge - IIP/IIIP	£225
Postscript Upgrade for LaserJet 4	£270
LaserJet 4 Lower Paper Cassette	£205
LaserJet 4 JetDirect Ethernet Card	£339
LaserJet IIIP Lower Paper Cassette	£115
Ozone filter for KX-P4420	£9
Ozone filter for KX-P4450/4455	£20
LaserJet 4Si Duplex Unit	£475
Envelope Feeder for LaserJet 4	£199
LaserJet Font Cartridges	from £45
LaserJet III FX/IBM Emulation Cart.	£79
Lower Paper Tray for Canon LBP-4	£98
A5 Paper Feeder for LaserJet 4P	£85
Postscript Upgrade for LaserJet 4P	£225

9pin Matrix Printers

Citizen Swift 90	80col	£114
Citizen Swift 90C	80col	£121
Citizen 1200+ Parallel	80col	£90
Citizen 120D+ Serial	80col	£102
Epson LX100	80col	£109
Epson LX300	80col	£90
Epson LX400	80col	£89
Epson LX1050	132col	£172
Epson FX870	80col	£222
Epson FX1170	132col	£280
Epson DFX5000+	132col	£1095
Pansonic KX-P1150	80col	£89
Panasonic KX-P1695	132col	£267
Star LC15	132col	£177
Star LC100C	80col	£89
Star ZA200	80col	£255
Star ZA250	132col	£315

24pin Matrix Printers

Citizen ABC Mono	80col	£109
Citizen ABC Colour	80col	£126
Citizen Swift 200 Mono	80col	£138
Citizen Swift 200 Colour	80col	£146
Citizen Swift 240 Mono	80col	£160
Citizen Swift 240 Colour	80col	£178
Citizen Swift 24X	132col	£235
Epson LQ100	80col	£98
Epson LQ150 Colour	80col	£152
Epson LQ570+	80col	£183
Epson LQ870	80col	£350
Epson LQ1070	132col	£282
Epson LQ1170+	132col	£400
Epson DLQ3000		£672
Epson LQ3000	132col	£680
NEC P2Q	80col	£110
NEC P3Q	132col	£236
NEC P32Q	132col	£175
NEC P62Q	80col	£315
NEC P72	132col	£375
NEC P90	132col	£549
Panasonic KX-P2023	80col	£109
Panasonic KX-P2124	80col	£200
Panasonic KX-P1624	132col	£210
Panasonic KX-P2135	80col	£124
Star LC24-20 II	80col	£113
Star LC24-15 II	132col	£232
Star LC24-30C	80col	£148
Star LC24-100	80col	£95
Star LC24-300C	80col	£146
Star XB24-200C	80col	£315
Star XB24-250C	132col	£385

Ribbons/Ink Cartridges

(Manufacturers Original Ribbons Only)

Type	Black	Colour
Canon BJ10ex/BJ10sx	£14	–
Canon BJ200/BJ230	£16	–
Canon BJ300/BJ330	£11	–
Canon BJC600	£6	£7
Canon BJC800	£16	£22
Citizen 120D+	£4	–
Citizen Swift 200/240	£4	£13
Citizen Swift 24X	£8	£18
Epson LX400/LX850/FX870	£4	–
Epson LX100	£4	–
Epson LX1050/FX1170	£5	–
Epson LQ100	£4	–
Epson LQ150	£4	£12
Epson LQ570/870	£5	–
Epson LQ1070/1170	£8	–
Epson LQ2550	£8	£16
Epson SQ870/SQ1170	£21	–
Epson Stylus Colour	£–	£29
Epson Stylus 300	£12	–
Epson Stylus 800/1000	£10	–
Fujitsu DL1150/DL1250	£5	£7
Fujitsu DL3600	£6	£12
Fujitsu B100/B200	£14	–
HP DeskJet Std Capacity	£–	£21
HP DeskJet High Capacity	£20	–
HP DeskJet 310	£15	£21
HP DeskJet 1200	£20	£21
HP PaintJet	£16	£18
HP PaintJet XL300	£16	£18
Kaga/Taxan KP810/815	£5	–
NEC P88Q/P32Q	£8	–
NEC P82/72/90	£8	£14
Panasonic 1150/1170/1180	£7	–
Panasonic 2180/23/24/35	£7	£14
Panasonic 1824/2824	£8	–
Star LC10/LC20/LC100	£5	£9
Star LC100/200	£5	£11
Star LC24-20/24-100/24-200	£5	£12
Star LC24-30	£8	£12
Star XB24/ZA200/ZA250	£5	£12
Star SJ48	£15	–
Star SJ144 Thermal	£18	£18

Inkjet Printers

Canon BJ10sx	80col	£136
Canon BJ200	80col	£178
Canon BJ230	132col	£236
Canon BJ300	80col	£318
Canon BJ330	132col	£368
Canon BJC600	80col	£330
Canon BJC800	132col	£1067
Canon BJC820 (Mac)	132col	£1228
Canon BJ4000C		£329
Citizen ProJet II	80col	£299
Epson Stylus 300	80col	£138
Epson Stylus 400	80col	£132
Epson Stylus 800+	80col	£170
Epson Stylus 1000	132col	£312
Epson Stylus Colour	80col	£333
Epson SQ870	80col	£415
Epson SQ1170	132col	£580
Fujitsu B100	80col	£145
HP DeskJet 320		£170
HP DeskJet 320 & CSF		£202
HP DeskJet 520	80col	£195
HP DeskJet 500C	80col	£214
HP DeskJet 560C	80col	£332
HP DeskJet 1200C	80col	£907
HP DeskJet 1200C PS	80col	£1266
HP PaintJet XL300+	132col	£1599
HP PaintJet XL300 PS	132col	£2568
HP DeskWriter 520 (Mac)	80col	£192
HP DeskWriter 500C (Mac)	80col	£260
HP DeskWriter 560C (Mac)	80col	£375
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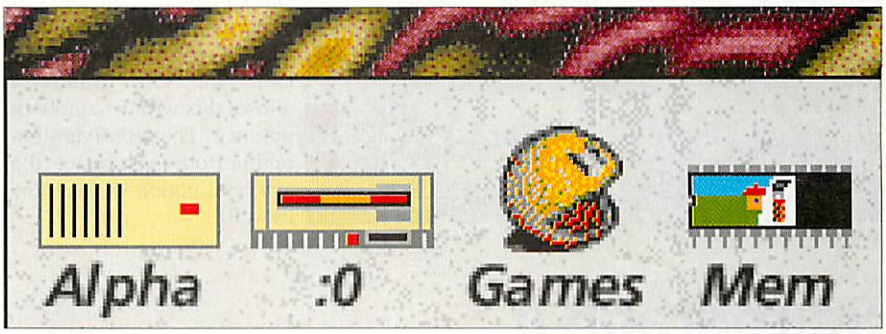
Dave Lawrence and Dave Acton present more programs, tips and techie trivia from beyond the PRM.

Optical allusion

Author: Harry Whitacre

We have here yet another one of our infamous desktop patches. *MOFSPatch* has been sent to us by Harry Whitacre of Portsmouth. It is quite a 'niche' patch and will only appeal to owners of magneto-optical drives who also use Hugo Fiennes/Serial Port's magneto optical filing system (MOFS). Nevertheless, we thought it worthy of inclusion in *INFO.

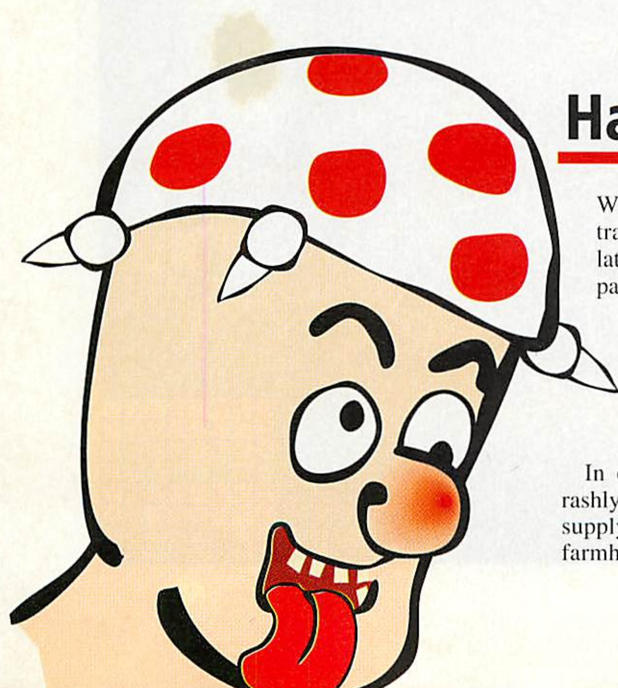
One of the (many) nice features of MOFS (over SCSIFS) is that it changes the name under the MOFS icon when a new disc is accessed. However, it has always been a little disappointing that the icon stays the same, a little 'games' or 'graphics' icon or whatever would liven up the icon bar no end. This is exactly what the patch program remedies.



Copy *MOFSPatch* into the *!MagOpt* directory, set the CSD there as well and then run the program. This will modify *!MOFile3* and create *new!MOFile3*. You can then edit the *!Run* file to load the new filer. You will now need to produce some extra icons for your discs and *ICONSPRITES them; putting them in *!MagOpt.!Sprites* will make this automatic. Some examples can be found on the cover disc.

There are a few points worth noting. The icon names should be prefixed by 'mo'; this is to try and make them unique (although it might not be possible to guarantee this). The names can be wildcarded with a single trailing '*'. An icon called 'mosound*' would then be used for discs called 'Sound', 'Sound2', 'Soundproof' and so on. If a match cannot be found the '!magopt' sprite (the sprite for the application) will be used.

When the drive has identified that there is no disc, the icon is labelled 'MagOpt 4'. Therefore, defining an icon called 'momagopt*' is a good idea – one with no disc in the drive would be even better. If you then also define an icon called 'mo*', *with* a disc in, this will be used as a last resort if no better match for a name can be found.



Harvest time

Author: Paul Dunning

We have established something of a tradition among these pages for simulations that are somewhat off the beaten path.

One of these was a Crop Circle generator by Allister Jenks back in September 1993. Our most regular regular, Jan Vibe, updated the program to give it a more 'authentic' feel in June 1994.

In our blurb about Jan's revision we rashly said, and I quote: 'If anybody could supply us with a *Draw* file of a drunken farmhand pushing a roller, then we can complete our one-line venture into praedial phenomena.'

I suppose, on reflection, this was asking for trouble since Paul Dunning of Watford has supplied just such a *Draw* file which you can find on the cover disc.

He also supplied an *ArtWorks* file of the same, but, alas, disc space wasn't sufficient to include both.

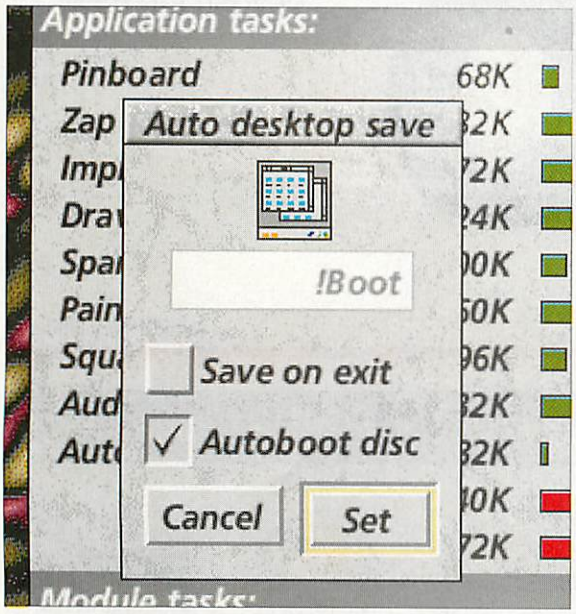
Apparently it took him several days to produce and is featured here as a tribute to all diligent *Acorn User* readers who regard each request we make, however improbable, as a challenge.

Auto desktop saving

Author: Nick Kennedy

An interesting little feature of RISC OS 3 here, pointed out by Nick Kennedy.

'You probably know about Desktop boot files. If you don't, I would advise a good look at your user guide before reading further, or this won't make any sense. What you may well not know is that there is a function to save them automatically. I did not know this myself until I saw it in the RISC OS 3 PRMs. There is a system variable called SaveDesk$File which holds the name of a file which the task-manager will write when you use Exit or Shut down.



The program *AutoDesk* eases the use of this feature, since it uses a desktop interface rather than the CLI. Simply drag the icon to wherever you keep your boot file and click on Set. Bear in mind that for autobooting to work there must be a file called *!Boot* in the root directory of your default filing system. This filing system must have OPT 4,2 set. (*AutoDesk* allows this with its autoboot option.) The configuration option Boot must be set (the autoboot option will set this as well).

Spirograph II

Author: Andy Pillidge

Once again we return to an old favourite. This time it's Andy Pillidge's *Spirograph* program that injects new life into an old idea.

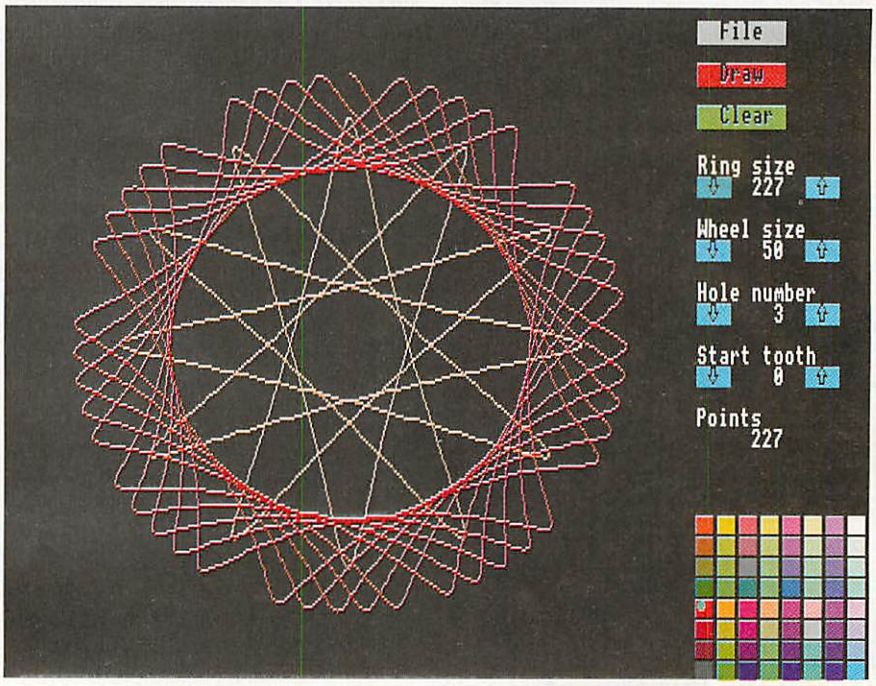
It's the latest simulation of the classic children's toy, but there's no risk of your biro slipping out of the hole in the plastic disc at a crucial moment.

The program uses mode 15, providing 256 colour (well, 64) patterns. The wheel and ring size, hole number, start point and pen colour are adjustable using the buttons on the right of the screen.

Generally, clicking with Select alters the parameters in steps of one, Adjust (or Shift-Select) in steps of five.

Further buttons are provided to start the pattern, clear the screen or export the design to a *Draw* file.

Apparently, Andy wanted the *Draw* file version to use Bezier curves for the best effect, but wasn't really sure how to go about it. If any kind reader could oblige we would love to hear from you. It would make the output files considerably smaller in size.



Transistor circuit

Author: Andrew Burrows

Hot on the heels of his resistor colour code program, Andrew Burrows has sent us a simple transistor circuit simulator. *Transistor* allows you to build and test potential divider circuits on the screen. It is designed to be used as an aid in the teaching of potential divider theory and provides a wide range of components, so many different circuits can be experimented with.

The design window shows the circuit diagram for a potential divider circuit. The toolboxes to the left and bottom of the window contain various components which can be dragged into place on the diagram. The toolboxes can be turned on and off.

The toolbox on the left-hand side of the window contains the following input components: switch, resistor, variable resistor, light dependent resistor, thermistor and moisture probe. Under the window there are three output components: lamp, LED and buzzer.

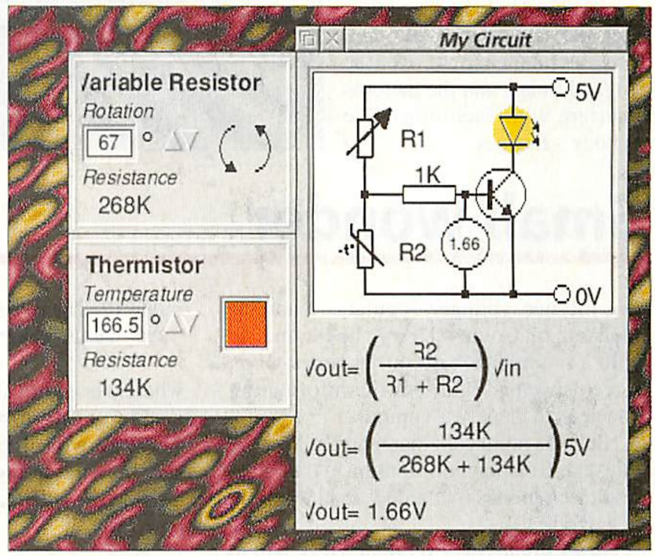
The input components can be dragged into place on the potential divider and the output components can be dragged into place above the transistor. The resistance of the resistor can be changed by clicking on the current value – a caret should appear and you can delete the old value and enter a new resistance. This is in ohms, but may be suffixed with 'K' or 'M' if required.

Clicking on the design menu with the middle button brings up a menu. From 'Enter' you can add components without the tool boxes being present. To enter a thermistor into R1, for example, you would choose 'Thermistor' from the list of input components for R1. You can open the test window by choosing 'Test' from the design window menu. Once you open the test window it becomes the current window, so if you close it using the close icon you can then open it again by clicking on the icon on the icon bar. The title for the circuit, as specified in the design window, is shown in the title bar of the test window.

The test window has a circuit diagram of the potential divider circuit at the top and the potential divider equation at the bottom. The equation is shown, first without any values, then with all the values filled in, and finally Vout is calculated.

If Vout is above 0.7 Volts then the transistor will turn on the output. If the output is a Lamp or LED it will glow, if it is a buzzer then the computer will make a beep about every 0.7 seconds.

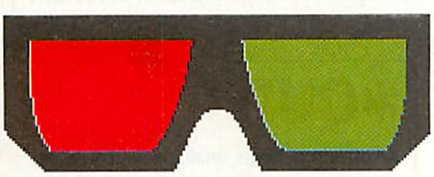
The test window has two smaller windows attached to the side of it. These change depending on the components R1 and R2 and allow the conditions to be changed. For example, a thermistor is sensitive to temperature so its window allows the temperature to be changed. As the conditions change the resistance of the components change, so the values of R1 and R2 are updated in the equation and a new value of Vout is found and if necessary, the state of the output is changed.



Only the resistor's window does not allow you to change the conditions as the resistance of the resistor is fixed. However, clicking on the small picture of a resistor in the top right-hand corner brings up a window showing the colour coding of the resistor in either four or five band format. Note the resistor is always shown to have five per cent tolerance. You can only change the value of the resistor in the design window (see above).

Non-dotty 3D!

Author: Jeremy Poulter



We've covered red/green 3D, red/blue 3D, crosseyed stereograms and goodness what else, but this submission from Jeremy Poulter is the first program we've received that uses the light and dark filters as seen on BBC Children in Need last year. So fish 'em out and put 'em on - that's if you haven't thrown them away already.

This method relies on sideways movement, so stationary images don't work, but it does mean that they can be in colour, and can be watched (reasonably comfortably) by those of us who don't want to wear a pair of Elton John's cast-offs.

Diced carets?

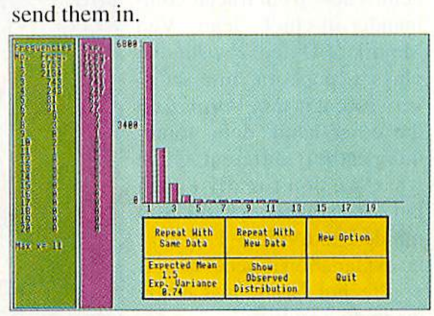
Author: David Craven

A brief departure into the realms of educational software now. David Craven of Greenhead College, Huddersfield has come up with a splendid demonstration of probability distributions. Using dice, three common distributions – Uniform, Binomial and Geometric – are illustrated in practice. The program is very easy to use and a small *!Help* file is on the disc too.

Essentially, the program can be used to illustrate the basic properties and shape of different distributions. Clearly the computer can produce random samples very quickly, which enables you to see how a theoretical distribution fits observed data better and better as the sample size is increased.

As an example, run the program and click Select on Geometric Distribution. Enter 100 for the number of successes and then select the number six only. Now click on Done. This simulates the number of throws needed to get a six with a single die. You would expect to get a six once in every six throws in the long run, yet the peak of the distribution is not at six! Now try the same experiment with 1000 successes and see how much smoother the shape of the distribution is.

David hopes his software will prove useful to other maths teachers and if any other members of the profession have come up with some neat little demos they think deserve a wider classroom audience, do send them in.



Model selector

Author: D M Francis

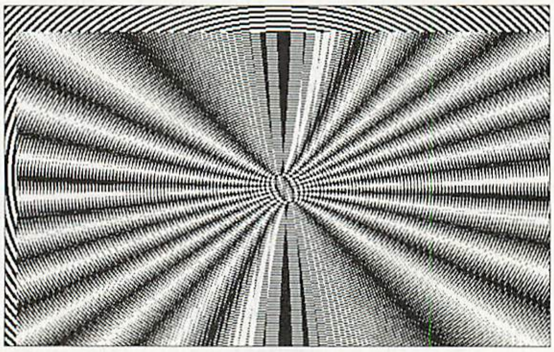
Impressed by RISC OS 3.5's mode selector, D M Francis set about writing a similar utility suitable for RISC OS 2 and 3 users alike. The result is *ResCol*.

Once installed, click on the icon to bring up the selector window. Choose a number of colours and resolution and then *Change* to change mode. RISC OS 2 users will need to specify monitor type using a separate dialogue box.

Less is Moiré

Author: Nick Kennedy

Moiré, best known for his fringe, lends his name to this one-line demo from Nick Kennedy. It manages to display the famous interference patterns in just a single line of Basic. A pattern of concentric rings is displayed and a copy is grabbed as a sprite. This then moves with the mouse over the original image and the patterns interfere with each other like nobody's business.



Small wonder

Author: Nicholas Marriott

One of our younger regulars, Nicholas Marriott of County Derry, has come up with a module to help out at times when screen space is tight, but the information you need to display is copious.

Nicholas points out that many games use tiny text to display information in the lower resolution modes that games tend to run in (e.g. mode 13).

For example, the excellent *SWIV* had to display details about the jeep and helicopter in just such a font.

Nicholas's module provides two easy-to-use SWI calls that can display text in a three by five pixel font which is about as small as you can get.

Note that the module is only designed to work in 'chunky' modes like 9 or 13 – the output will look a little strange in mode 12 for example, but then of course, you don't need to use small text in mode 12. The two SWIs provided are:

```
SYS "Small_Char",c,x,y
```

where c is an ASCII code (32-95 only), and x and y are standard graphics co-ordinates. This call will plot one character onto the screen. Attempting to display a character outside the acceptable range will produce an error.

```
SYS "Small_String",string,x,y
```

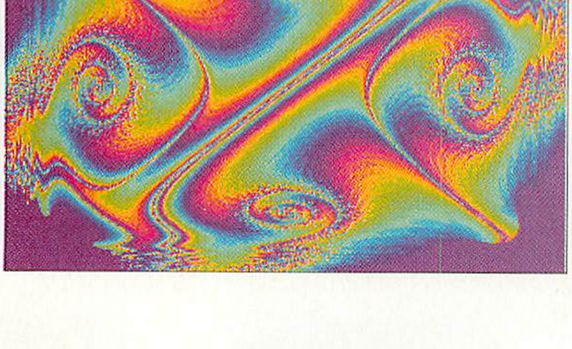
This call works in the same way but takes a pointer to a null-terminated string.

To demonstrate the module, install it (by double-clicking on *SmallFont*) and then run *SmallText* which displays the text file *SmallFont1* using the tiny character set. Incidentally, Nicholas's module uses entirely legal calls, so should work under all circumstances.

Fractal corner

Author: Jean Van Mourik

Two unusual little fractal demos now from fractal commander-in-chief Jean Van Mourik of Dyfed. *PopJul* displays a 'popcorn Julia set' – very nice it is too. *Voronoi* on the other hand, does something entirely different. Quite what, we don't really know, but if you're a fractally minded individual I'm sure no explanation is necessary. If you're not, well, just enjoy the pretty results.



Kern you tell the difference

Author: Andrew Kemp

'OK', says contributor Andrew Kemp, 'so RISC OS 3 fonts support autokerning. But when do you ever see it, unless you have some expensive DTP package? Quite possibly all over the place, but I can't say I have noticed – hence *DrawSpace*.'

This little application is Andrew's solution to the problem of bringing the text in your *Draw* files slap-bang up to date. *Autokerning* is a feature of the latest Font Manager to yet again improve the display.

'There are two ways of using *DrawSpace*. Firstly, you can just use the main dialogue box to set up autokerned text objects, and drag them into *Draw* editing windows. Alternatively it can be used to process existing *Draw* files, turning all non-system font text (excluding text areas) into autokerned objects.

'To create an autokerned text object, use the options in the "Font" group box to set up the size, colour and font name. Then type the text into the writable icon at the bottom of the window, and press Return (or click on Save). Then drag the icon from the save box to a directory display, or a *Draw* window, or whatever.'

To process an existing *Draw* file, just drag it onto the *DrawSpace* window. Once processed, a save box will pop up, allowing you to save the modified file or export it back to *Draw* etc.

Draw files only support autokerning of transformed text objects. This means that any ordinary text objects are converted when processing files. The result of this is that many *Draw* files will get larger, as transformed objects require extra data such as transformation matrices.

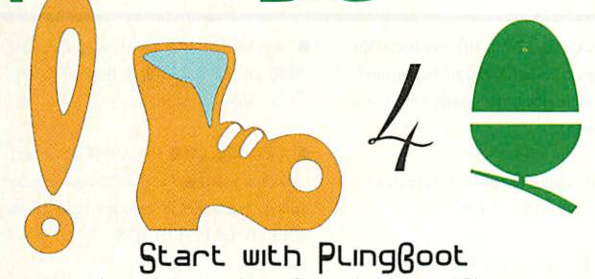
Andrew's utility supports interactive help and direct RAM transfer to allow easy to-ing and fro-ing between it and *Draw*.

*QUIT

All offerings, large, small, clever, pretty or even useless are always welcome. Send them to *INFO, *Acorn User*, Europress Publications Ltd, Europa House, Adlington Park, Macclesfield SK10 4NP.

Name, address and program title on every disc please and include a text file containing the same. An SAE ensures your disc's return. Also include whatever instructions, diagrams, examples and screenshots you can. We'd also like to include a few more 'techie' bits in these pages, so if you've got some cunning utility with an even cunninger explanation of how it works, let us know.

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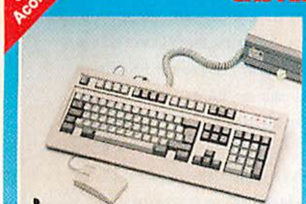
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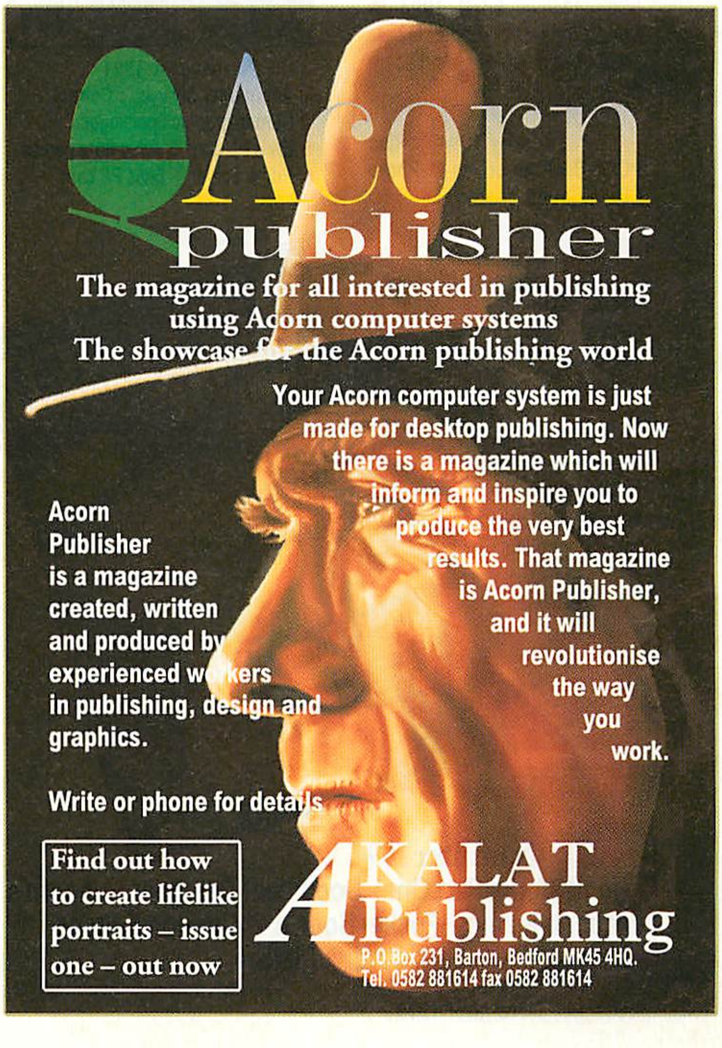


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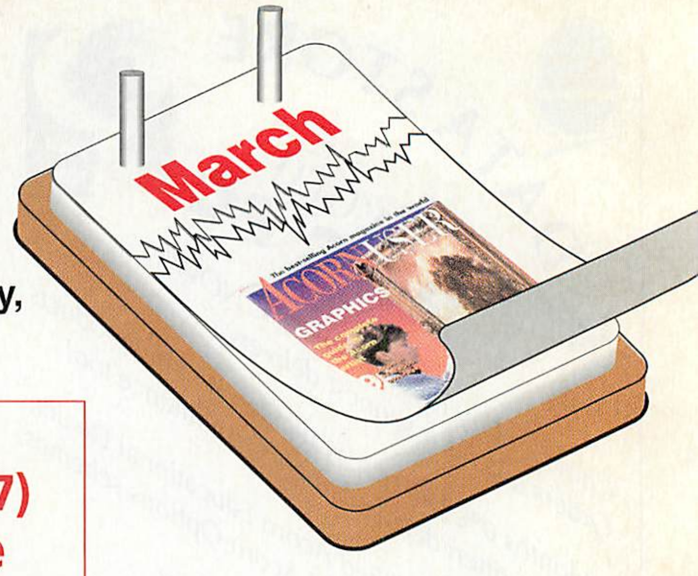
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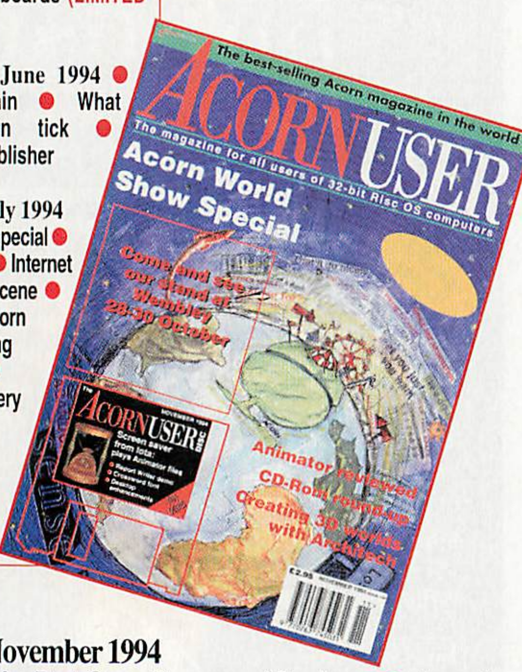
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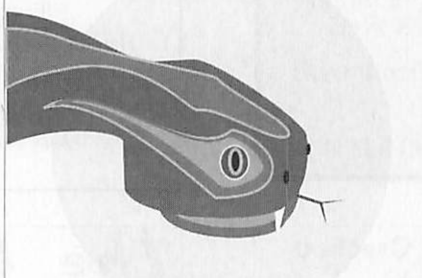
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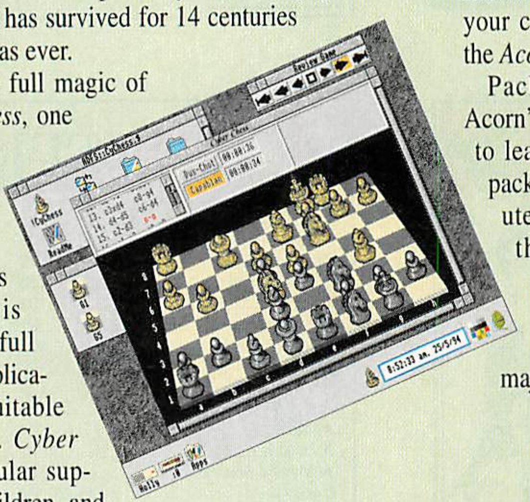
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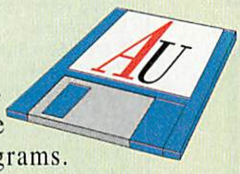
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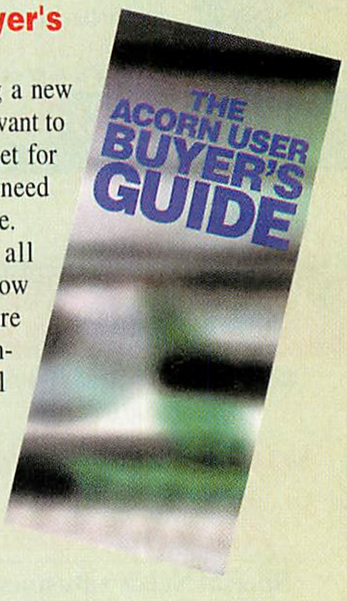
This great game has superb 3D simulation, is Risc OS compliant, has full implementation of all applicable chess laws and is suitable for high spec machines. *Cyber Chess* also offers particular support for beginners and children, and good support for stronger players.

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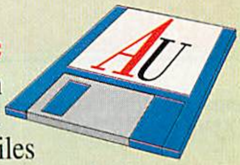
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Cyber Chess is one of the highest specification chess-playing programs available for any computer. Some of the main points of this superb game are:

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Cyber Chess is a near complete 3D simulation of the real game. Animation is used to move the pieces smoothly around the board; It is designed for total clarity. The board is carefully arranged so it can be played from without difficulty and a large 2D view is also provided as an option, with high-quality digitised stereo sound and speech.



Risc OS compliant

Cyber Chess runs from the desktop in a window; it is fully multi-tasking, intuitive and follows the 3D style associated with high quality software.

It is multi-windowed and any number of games can be run from one incarnation of the program.

A sophisticated internal scheduling algorithm allows *Cyber Chess* to drive all computer opponents/games simultaneously while still multi-tasking smoothly with other desktop applications.

Support for stronger players

Cyber Chess has a state-of-the-art chess algorithm and can perform analysis, giving the best line of play from the current position and an estimate of who is winning or losing and by how much.

There are full tournament time controls which can be set up. Time controls can be set for human players as well as computer opponents to simulate real tournament conditions.

The state-of-the-art opening book supports opening traps and advice. Multiple books are provided and new ones can be added or existing ones edited.Even the style of computer play (defensive, attacking, etc) can be adjusted to taste or to prepare for a match against a similar human opponent.

Rules

All of the applicable chess laws are implemented, including en passant captures, underpromotions, 50/75 move rule etc, even resignation and draw by agreement are supported.

Support for beginners/children

You can learn chess from scratch using the*Cyber Chess* tutorial supplied. There are 100 beginner levels provided, ranging from 1(very weak) to 99 (reasonably competent). When you beat level 99 you can graduate to 'full strength' mode. The teaching op-tion shows you which moves are legal as you play and if a player gets stuck a hint can be requested. The names of the openings can be announced as they are played quickly, familiarising chess learners with the various opening systems.

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The Moxon Interview

DAVE COLEMAN & DAVID DADE

'My brother always asks me how I can justify spending so much on Arcade. I just tell him that it's my hobby.'

What goes click, brrr, beep, zzzz, clank, pip, clunk, pop, buzz, beep, clank, phut, click, brrrrr, zip... all night? The answer: Dave Coleman's bedroom.

And the reason? Five telephone lines, a heap of modems, large hard discs, a tape backup system and a considerable number of happy users of the Arcade bulletin board. Of course, Arcade users aren't *really* there, but in this age of telephonic communication, everyone is potentially only a phone call away.

Arcade was started by Dave Coleman (at the back, above) and David Dade back in 1990 – at 13:04:57 on 11 June 1990, to be precise, judging by the first ever message received. It's been a phenomenal success ever since.

'When we started,' says David, 'I remember saying to Dave that three lines – which is what we started with – was too many and I was sceptical that anyone would ring at all. It wasn't long before we needed to go to five lines.'

And it seems that five lines isn't enough...

'It's got to the point where we can only do system maintenance when we have days off from work, it's that busy in the evening,' says Dave, bringing up the Arcade statistics display on screen.

'Yesterday we had 267 calls, which is about average for a weekday; we get about 400 per day at the weekend. Last week we had a total of 2142 calls from 506 users, and we've got nearly 1900 registered users, growing by about half a dozen a day.'

But all this is done for love, not money. Arcade is a free bulletin board – all you have to do is dial 0181-654 2212, type in your personal details and you're a user. To gain full access to the file areas, you just need to send proof of address to the sysops (system operators: Dave and David) and that's it. No line charge, no subscription: it's totally free.

'Charging a subscription would go against the whole spirit of Arcade,' says Dave. 'I remember about two years ago our main hard drive died, just like that: Arcade was off-line. Boris, one of our loyal users, and Martin from Atomwide spent all night salvaging the contents – they saved about 90 per cent of the disc – and Martin lent us a Syquest so we were up and running the next day.

'But we still needed a hard drive, so we put out a message saying "any donations towards a new hard drive gratefully received", expecting to get about £20-30, and we got almost £2000 in total.'

'It's such a loyal community,' adds David, and he's not wrong. *Acorn User* has been a regular Arcade user for some time, and it's excellent for feedback and for bringing you down to earth when you get things wrong. But which area of the bulletin board do the sysops like the best?

'The multi-user chat area,' says Dave, instantly. 'You can log on to find someone from America talking to someone in Scotland about all sorts of strange things, and it's fascinating.'

'For me it's the obvious enjoyment people express when they're talking on the board,' says David. 'People can say exactly what they want to, without other people thinking they've got an attitude problem.'

'That's right,' continues David. 'Someone can say something really trivial and it can start a thread of conversation that escalates, and sometimes someone says something and I think "that'll start a riot", and nothing comes of it. It's fascinating.'

What I find fascinating is that most of the people on Arcade have never met each other, yet they talk so freely to each other: perhaps it's *because* they haven't met one other. However, there are the meetings...

'We have meetings every three months or do,' says Dave, 'and people are never what you expect them to be. It's great!'

And as for the future of Arcade, there are plenty of plans afoot.

'I'm shifting the computers out of my bedroom into their own room,' says Dave, 'and we're moving the main bulk onto a Risc PC. Then we'll network a few machines together and might even put the existing file areas onto a CD-ROM, so we can clear down the hard drives and start filling them again.'

'We'd like more lines,' says David, 'but justifying the cost is hard.'

'Then again,' says Dave, 'my brother always asks me how I can justify spending so much on Arcade. I just tell him that it's my hobby.'

And it's not just Dave's hobby, it's a hobby for 1900 other people. AU



Pineapple Software Virus Protection Scheme



The Pineapple Software Virus Protection Scheme provides the most comprehensive protection available against computer viruses. !Killer together with VProtect will detect and remove all of the currently known 66 families of virus (over 100 viruses in total). Because new viruses are being discovered all the time our virus protection scheme will provide you with 3-4 updates of the software each year. We can also offer immediate advice by 'phone. !Killer can scan any filing system or device including floppies, harddiscs, networks, even CDRoms. All types of compressed file can also be scanned. All infected files are fully restored without having to reload from master discs or backups.

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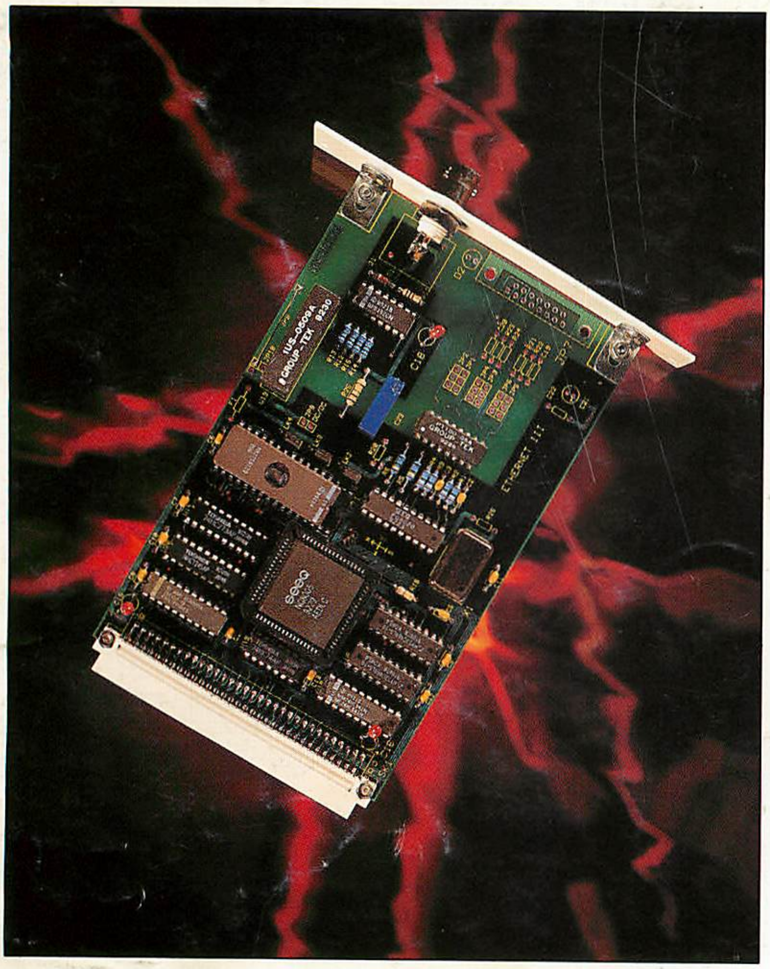
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